

The
**AGRICULTURAL
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PART II

*

PRINCIPAL CONTENTS

The Content and Sources of English Agrarian History after 1500
by **JOAN THIRSK**

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The Curving Plough-strip and its Historical Implications
by **S. R. EYRE**

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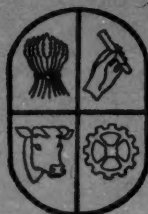
Crop Nutrition in Tudor and Early Stuart England
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The Content and Sources of English Agrarian History after 1500

By JOAN THIRSK

PRESENT knowledge concerning the agrarian history of England after 1500 owes most to a group of historians who published books on the subject in the period 1907-15. An earlier generation of scholars, including Seebohm, Vinogradoff, and Maitland, had devoted their attention to the origins of the manor and its development in the Middle Ages. The next generation broadened its interests to cover later periods and other aspects of agrarian life: agricultural techniques, and the economics of farming, as well as tenurial relationships. The history of farming from the earliest times was surveyed by W. H. R. Curtler in *A Short History of English Agriculture* (1909), and by R. E. Prothero (later Lord Ernle) in *English Farming Past and Present* (1912). Enclosure, and particularly the effects of Parliamentary enclosure, were discussed by Gilbert Slater in *The English Peasantry and the Enclosure of the Common Fields* (1907), by A. H. Johnson in *The Disappearance of the Small Landowner* (1909), and by E. C. K. Gonner in *Common Land and Inclosure* (1912). The economics of peasant versus capitalist agriculture were examined by the German scholar Hermann Levy in *Large and Small Holdings*, first published in 1904 and enlarged in an English translation in 1911. A *History of the English Agricultural Labourer* by the German political economist W. Hasbach appeared in an English translation in 1908, with a preface by Sidney Webb. It was followed in 1911 by *The Village Labourer*, a more concentrated study of the effects of Parliamentary enclosure on the same class by J. L. and Barbara Hammond. Professor R. H. Tawney pushed the investigation back in time, and in *The Agrarian Problem in the Sixteenth Century* (1912) analysed the impact of the price revolution on the rural classes. Finally, the American historian H. L. Gray made a study of English field systems in a book of that name, published in 1915.

These were landmarks in the writing of modern agrarian history, and since all appeared within a few years of each other, it looked as though a strong school of agrarian historians had been established. In fact, however, the subject languished for the next twenty years. This may have been due in part to the authoritative nature and seeming finality of the works then published—they are still the standard text-books on their subjects, and are likely to remain so for years to come—but the more likely explanation is that

they were a by-product of hot political debate, which lost energy and urgency when war brought prosperity to the farmer in 1914. The writings of these historians made their appearance during an agricultural depression, in the midst of earnest, anxious discussion about the future of agriculture, which taxed the historian with questions about the past. What had happened to the stout English peasantry of the golden Tudor age? Had the Parliamentary enclosure of the open fields, so long acclaimed as a wholly progressive measure, benefited society as much as it had benefited the land? Had peasant proprietorship possessed some virtue, unseen till now when disaster befell? Did the past, in short, hold the lost key to agricultural prosperity?

Writing in an atmosphere charged with "anticipations, whether true or false, of coming change,"¹ none of these scholars could fail to be aware of the topical nature of their researches. Some, having reached their conclusions, threw their opinions into the political debate. Lord Ernle wrote in the conviction that "a considerable increase in the number of peasant owner-ships, in suitable hands, on suitable land, and in suitable localities, was socially, economically, and agriculturally advantageous." Hasbach held that an increase in peasant proprietorship was not only desirable, but inevitable, a view which was not shared by the writer of the preface to his book, Sidney Webb. Gilbert Slater summed up his opinion in the sentence "British agriculture must be democratised," which allowed for the increase of small holdings and allotments, together with some form of agricultural co-operation "suitable to modern conditions," which he did not further define.²

These views read oddly nowadays, but in the circumstances of the time they were not illogical. The tide of opinion, among historians at least, was running in favour of small holdings, because these had withstood the rigours of economic depression better than the large farms.³ With the outbreak of war in 1914, however, the discussion was postponed because the problems of agriculture were temporarily solved. After the war, the controversy did not again engage the historians.

The significance of the meagre harvest of writing on agrarian history after 1915 is easily misunderstood, however. After a lull of some twenty years, fresh advances in understanding of the subject began to be made in the 'thirties through more modest local studies, many of which were prepared as university theses and never published. Their scope was narrow, geographi-

¹ R. E. Prothero, *English Farming Past and Present* (2nd ed., 1919), p. 393.

² *Ibid.*, p. vii; W. Hasbach, *A History of the English Agricultural Labourer*, p. x; Gilbert Slater, *The English Peasantry and the Enclosure of the Common Fields*, p. vii.

³ See Hermann Levy's explanation in *Large and Small Holdings*, pp. 1-2, 211.

cally speaking—the history of a county or smaller unit, covering no more than a century or two—but they immensely enriched the content of agrarian history by underlining the great diversity of farming practice and social structure between regions. In consequence, scholars turned away from the writing of general works on a national scale and concentrated instead on regional studies, mostly written up into articles for local historical societies. Even so, the harvest of writing between 1918 and 1945 could not be called abundant. The more remarkable growth of interest in the subject has taken place since 1945, and has been coincident with the development of local history. Under its influence, agrarian historians have been drawn from the study of single aspects of the rural economy such as field systems, rents, tenures, or social classes towards the study of the local community in all its aspects.¹ At the same time, monographs on medieval estates have demonstrated the wisdom of this approach by showing the complex circumstances in which regional variations emerge. They have shown that the current facts of landownership, land distribution, tenure, and agricultural prices do not alone account for regional eccentricity, that some of its causes lie deeper, in soil and physical environment, the history of early settlement, size of population, and local customs of inheritance.²

The scope of agrarian history has broadened, therefore, but so also have the sources of information. New classes of documents have been discovered, and more assiduous use is being made of evidence on the ground. Fresh paths have been opened up, and more pitfalls dug for the unwary.

Study of the ground evidence is as yet in its infancy. Our present meagre apparatus of knowledge does not allow us to interpret the landscape without much preliminary information from documents. Perhaps this will always be so. On the other hand, it is conceivable that new methods will be devised, at least for dating features in the landscape, which will relieve some of the pressure on documents. As things are at present, the history of fen reclamation, or of sheep farming on the Cistercian granges of Yorkshire, can be placed in their exact topographical setting by reference to the fendikes, the sheephouses, and sheepwalk boundary marks which survive on the ground.

¹ A pioneer study was J. D. Chambers, *Nottinghamshire in the Eighteenth Century*, 1932. It was not concerned with agrarian history alone, but was the study of a community from all points of view, inspired by the belief that local history could enlarge our understanding of national history.

² See, in particular, R. H. Hilton, *Social Structure of Rural Warwickshire in the Middle Ages*, Dugdale Society Occasional Papers, No. 9, 1950; G. R. J. Jones, 'Some Medieval Rural Settlements in North Wales', *Institute of British Geographers: Transactions and Papers*, No. 19, 1953, pp. 51–72; G. C. Homans, 'The Rural Sociology of Medieval England', *Past and Present*, No. 4, 1953, pp. 32–43.

But without documents—and this is the problem which obstructs the interpretation of ridge and furrow—the evidence of the landscape is unusable.¹

This is not to say that the general survey of a region as it is today will not help the historian to reconstruct in imagination the condition of the land in the sixteenth century. The disposition of most villages, rivers, and meadows, for example, remains the same. The principal changes that must be allowed for in the appearance of the countryside are those brought about by enclosure, land drainage, and the use of artificial fertilizers. Sixteenth- and seventeenth-century writers on husbandry have made us familiar with contemporary techniques and tools of husbandry.² Knowing their limitations, and with a rough mental picture of the countryside before the improvements of the nineteenth century, we shall be prepared for some of the more obvious regional differences. On grounds of common sense, it is likely, for example, that farmers in coastal villages with wide stretches of saltmarsh will favour sheep fattening rather than crop growing; that farmers in the ill-drained fenland will specialize in cattle rather than corn, since seasonal flooding exposes their fields to continuous risk. Farmers on the clays may concentrate on corn or stock, or give equal attention to both according to the state of the market and their personal preferences, but a farmer in the chalk country will have less choice. His arable is restricted by the amount of manure he can get from the cattle and sheep which he feeds on the downland commons. If no stint of animals is in operation, a convention, not always strictly adhered to, required him to limit them to the number he could winter on his arable land.

If physical conditions prepare us for certain conclusions about sixteenth-century husbandry in a particular district, we may look for confirmatory evidence in the manorial surveys, which show the proportion of cultivated land on the manor which was devoted to arable, meadow, and pasture. Manorial surveys were intended to inform the manorial lord of the way in which his land was tenanted and rented. The fullest survey, though rare to find, will give the size of each tenant's holding, the acreage of each man's arable, meadow, pasture, and closes, the type and conditions of tenure, the rents and dues, the area of common pasture, and the stint of animals allowed to each tenant according to the size of his arable holding. The most detailed

¹ For an excellent combination of documentary and ground evidence, see H. E. Hallam, *The New Lands of Elloe*, Department of English Local History, Occasional Paper No. 6, University College of Leicester, 1954.

² For a bibliographical discussion of these writings, see G. E. Fussell, *The Old English Farming Books from Fitzherbert to Tull*, 1947; *More Old English Farming Books from Tull to the Board of Agriculture*, 1950.

and informative manorial surveys belong to the sixteenth and seventeenth centuries. In the eighteenth century their place was taken by valuations, which contain equivalent information, or by rentals, but these omit descriptions of the use and disposition of the land.¹

An examination of some manorial surveys of the Midlands suggests that in districts of mixed husbandry it was usual for somewhere between 60 and 80 per cent of the cultivated land (i.e. excluding the common pastures and waste) to be devoted to crops. In a pastoral region the proportion of ploughland was not likely to exceed 45 per cent, and might fall as low as 10 per cent. To measure the full significance of these variations, however, it is necessary to know what proportion of the arable land was sown each year. Some land was sufficiently fertile to be fallowed every fourth year, other land was fallowed every third or even every second year. Unfortunately, the number of fields is not a reliable guide to the rotation. It is frequently true that a village possessing fields with two or three clear directional names, such as North and South Fields, or East, West, and South Fields, will have two- or three-course rotations respectively. But since villages might modify the rotation when there were more mouths to be fed, or because of an increase or diminution in the supply of manure, or as a result of piecemeal enclosure, guesswork by the sixteenth century is dangerous. A statement about the rotations will sometimes be found in a manorial survey, or in a manorial court roll. It may occur incidentally in the bills and replies of plaintiff and defendant in a lawsuit, or it may not be mentioned anywhere.²

In both arable and pastoral farming regions it is usual, in the sixteenth century, to find some 8 to 15 per cent of the cultivated land in meadow, while the rest of the land, apart from the open arable, is taken up with temporary ley,³ or with pasture closes. These may lie at the back of the farmhouse, or they may consist of consolidated strips taken out of the open fields and held in severalty. By the sixteenth century, in the Midlands at least, the area of commons and waste in districts of mixed husbandry was small, while in pastoral areas it was extensive. The chief reason for this was that pastoral areas had their husbandry thrust upon them by the physical conditions, and if the land was not suited to crops, not only was there less incentive to engage in assarting, but there were often positive advantages to the majority in

¹ A number of surveys have been printed by local societies. See, for example, *Surveys of the Manors of Philip, First Earl of Pembroke and Montgomery, 1631-2*, ed. E. Kerridge, Wilts Archaeolog. and Nat. Hist. Soc., Records Branch, ix, 1953.

² See also below, page 73.

³ For the use of leys in open fields, see W. G. Hoskins, *Essays in Leicestershire History*, 1951, pp. 140-4.

keeping their grazing in common.¹ In districts of mixed farming where the waste was potential arable land, gradual encroachments in the course of the centuries had brought much of it into cultivation, and by the sixteenth century there was only a limited quantity of common pasture left.

Manorial surveys indicate broad differences in land-use, but it is on the probate inventories, which record the crops and stock on individual farms, that the more detailed picture of husbandry depends. Inventories are lists drawn up by neighbours of the possessions of a deceased person who has left a will. They list his furniture and household possessions room by room, the animals and implements in the yard, the animals and crops in the fields, and the quantity of grain, hemp, flax, wool, wood, and hay in store. The animals are usually counted and classified with great care. Less often, the exact acreages of the crops growing in the fields are given.²

The inventories available to the historian at present are those of wills proved in local probate courts, and housed either in the local probate registries or in local record offices. Inventories of wills proved in the Prerogative Court of Canterbury, which include those of the more substantial gentry, are at Somerset House, London, but are not available for inspection. The inventories begin in the 1530's, and are most informative in the sixteenth and seventeenth centuries. They become less detailed in the course of the eighteenth century, and cease about 1830.

Since the inventories have only recently been explored by economic historians, certain problems are as yet unsolved concerning their reliability for use in comparative studies between different periods and different districts. The question is of fundamental importance for agrarian history, since the character of farming regions will not be fully uncovered without the aid of comparative statistical material from different districts. Yet the answer must wait upon further use of the inventories, and the comparison of results with information derived from other sources. It is a case of having to use the tools in order to learn how to use them.

¹ See the preamble of the Inclosure Prevention Act, 1684, repealing certain clauses of an act of 15 Chas. II (an Act for settling the draining of the Great Level) which had allowed manorial lords to enclose a part of the commons for themselves. "... such taking and cutting of the said commons and wastes into small pieces is since found to be very prejudicial to the owners and country, being a great waste of ground in division, which are hard to be kept as fences between party and party, the roadways and passages through such commons as set forth being very low, and generally in bad ground, not passable or well to be amended, whereby such divisions are of little value."—Samuel Wells, *The History of the Drainage of the Great Level*, 1830, II, pp. 519–20.

² A sample of Essex inventories has been printed in *Farm and Cottage Inventories of Mid-Essex*, ed. F. W. Steer, Essex County Council, 1950.

The main question is whether the inventories fairly represent all classes of the community. A recent study of this question showed that in one Nottinghamshire village hardly more than a quarter of the population which died between 1572 and 1600 left wills, while in the period 1660-1725 the proportion was just over a fifth. Yet the most cursory examination of inventories will show a wide variety of social classes represented: not only gentry and yeomen, but husbandmen, craftsmen, labourers, and widows. The first question then can be reduced to this: how poor and how numerous were the very poor who were omitted? The second question is whether the inventories of the seventeenth and eighteenth centuries were equally representative of the same classes. Can a comparison be safely made between standards of wealth at two different periods, or did the habit of leaving wills gradually lose its hold on the poorer classes? Did more and more of the gentry and even the yeomen apply for probate to the Prerogative Court of Canterbury? In this connection, it is prudent to notice conclusions drawn from the inventories of four Nottinghamshire parishes, even though the sample is a small one. They showed that the proportion of craftsmen and labourers represented in them fell considerably as between the period 1575-1639 and 1660-99. This may reflect similar changes in the class structure of the four parishes. But if so, it is the reverse of the class changes which we have been taught to expect.¹ So far as our experience extends at the moment, it would seem to be safer to make comparisons between regions than between centuries.

Of greatest value to the agrarian historian is the information in the inventories concerning the numbers of stock, the acreage of crops, the quantity of grain and other farm produce in store, and the implements and tools of husbandry and of the dairy. Judging from the inventories of Leicestershire and Lincolnshire in the sixteenth century, the two most important crops grown by the Midland peasant were barley and pulses. Wheat ranked third in importance, rye fourth, and oats fifth. But although this order of precedence was widely observed, the average area of sown land, and the pro-

¹ Class representation in the inventories is considered in Maurice Barley, 'Farmhouses and Cottages, 1550-1725', *Economic History Review*, 2nd Series, VII, 1955, pp. 291-306. A sample of inventories from four Nottinghamshire parishes, 1575-1639, showed the classes represented in the following proportions: gentry 5 per cent; yeomen 11.4 per cent; husbandmen 15.7 per cent; craftsmen 11 per cent; labourers 21.5 per cent; widows 11.6 per cent; not stated 23.7 per cent. If the last two groups are omitted from the figures, the proportions are as follows: gentry 7.7 per cent; yeomen 17.6 per cent; husbandmen 24.3 per cent; craftsmen 16.9 per cent; labourers 33.2 per cent. These figures seem to give generous weight to the lower classes. The proportion of labourers agrees with the evidence of the 1524 subsidy that one-third of the population of most villages depended at least in part on wages for a living.

portion of land devoted to each crop, varied significantly between regions. In Lincolnshire, for example, barley occupied 58 per cent of a sown area of twenty-six acres on the wolds and heath; 54 per cent of a sown area of eight acres in the fens, 42 per cent of a sown area of sixteen acres in the clay vales, and 30 per cent of a sown area of seventeen acres in the marshland. In the Leicestershire claylands the figures were much the same as for the Lincolnshire clays. The average sown area was about twenty acres, of which some 38 per cent was sown with barley.¹

Experience so far suggests that single inventories are of little use for indicating the crop rotations of the open fields. More often than not, there is an awkward disproportion in the amount of land which the peasant had under spring and winter crops.² This was probably due to the disproportions in the amount of land he held in each field—the result of much buying and selling of land over the centuries. It meant that the peasant whose land lay wholly in the open fields did not reap the same harvest every year. Alternative explanations of the disproportion are that parts of his arable land were enclosed, and not subject to the same rotations as the land in the open fields, or that not all the arable lay in one village and subject to the same field course.

The study of single inventories is necessary to explain individual idiosyncrasies in stock keeping, but average figures for a whole region are the vital clue to regional specialization. Nearly all Midland peasants who left wills at death kept a cow or two, fewer people kept sheep and pigs, and fewer still horses, while goats were almost, if not entirely, unknown. These generalizations mask striking regional differences. For example, in sixteenth-century Lincolnshire the average flock of sheep in the claylands was twenty-six, whereas in the marshland, the centre of sheep fattening, it was forty. The average farmer in the more wooded claylands kept six pigs, where the fenland peasant with meagre resources of wood and scrub kept only four. Cattle of all kinds were more numerous on the farms of the fen and marsh than on the wolds and heath. It is from these and other comparative observations that regional variations in Lincolnshire finally emerge, and lay bare the contrast between the dairying and sheep husbandry of the fenland, the sheep and cattle fattening of the marshland, the sheep and barley farming of the wolds and heath, and the mixed husbandry of the clay vales.³

¹ W. G. Hoskins, *op. cit.*, pp. 137, 160, 168, 171.

² See the attempt to deduce rotations from inventories in Julian Cornwall, 'Farming in Sussex, 1540-1640', *Sussex Archaeological Collections*, xcii, 1954, pp. 71-2.

³ The regions of Lincolnshire are analysed in greater detail in a book I have in preparation on Lincolnshire agrarian history, 1540-1914.

Having obtained some idea of land use and the specialized husbandry of a region, the historian must consider the size and social structure of its villages, for changes in population and land distribution in the next two centuries exerted a profound influence on the organization and techniques of farming. The size of village communities can be gauged from ecclesiastical returns giving the number of families or communicants in the parish. In 1563 the archdeacons of the dioceses throughout the kingdom were asked to submit a return of the number of families in each parish, and although the order was not everywhere complied with, the returns for many dioceses have survived.¹ In some, the enquiry was followed by others, which, so long as the figures are directly comparable, allow changes in population to be observed at different dates in the course of the next two hundred years. In the diocese of Lincoln,² for example, the number of communicants was returned in 1603, the number of communicants and non-conformists in 1676, the number of families in 1705-23, and the number of families in 1788-92. In districts where no such returns exist, the hearth tax returns, which are tax assessments covering various years between 1662 and 1674, and which give the names of all householders paying the tax, together with those who were exempt on grounds of poverty, can be used to give a rough idea of the number of houses per village in the mid-seventeenth century.³

For a picture of the social structure of a village or district, information has to be drawn from two imperfect sources. The manorial survey gives the size of farm holdings rented directly from the lord, but it tells us nothing about the sub-letting and exchange-letting which went on among tenants, and which is known to have been considerable. This is a serious shortcoming, but it does not empty the survey of all useful content. It may not tell the exact truth concerning the distribution of land among the tillers of the soil, but at the same time it is unlikely to distort the picture out of all recognition. In the fenland of Holland, for example, where there were frequently three, four, or five manors per village, the manorial survey shows a large proportion of very small allotment-like holdings. Since it is probable that many peasants held land of more than one manor, a single manorial survey undoubtedly exaggerates the smallness of the holdings. Yet at the same time,

¹ These returns are in British Museum, Harleian MSS 594, 595, and 618.

² The diocese of Lincoln included the counties of Lincolnshire, Leicestershire, Bedfordshire, Buckinghamshire, Hertfordshire, and Huntingdonshire.

³ The Hearth Tax Returns are discussed in C. A. F. Meekings, *Surrey Hearth Tax, 1664*, Surrey Record Society, xvii, parts 41-2, 1940.

it serves to illustrate reliably enough the contrast between the small holdings of the fen and the large farms of the neighbouring wolds.¹

The second source of information on the class composition of the village is the subsidy assessment of 1524, which was a completely new assessment in that year, village by village, of all persons possessing goods or lands, or earning wages, worth at least twenty shillings a year. In the country districts, though not in the town, this assessment seems to have included the great majority of householders, and although the meaning of the valuations placed on goods and land is not yet fully understood, they seem to offer a rough and ready guide to the relative distribution of wealth in the village. They emphasize the contrast, for example, between the social structure of the small wold villages of Lincolnshire, which possessed a rich squire, one or two yeomen and husbandmen, and a group of wage labourers, and the large fen villages with every grade of wealth represented in a gradually descending scale.²

The broad picture of a region, showing the size of the average village community, its class structure, and predominant system of husbandry in the sixteenth century, lays the foundation for the third and most important task of all, to trace the process of change in the course of the next three and a half centuries, and if possible analyse its causes. To do this, account must be taken of the many aspects of social and economic development which, by their interaction, brought about alterations in farming practice: changes in market demand, for example; changes in food habits and standards of living; changes in the distribution of land between classes, and changes in the size of classes; and finally, more important than any of these as the agent of agricultural revolution, the changing relationship between the supply of land and the size of the population. Any community which earns its living almost exclusively from agriculture will be most profoundly affected in its husbandry by alterations in its resources of land or people.

Many of these changes can be traced for the seventeenth century in the same classes of documents as were used to compile the account of the Tudor period, particularly manorial surveys, probate inventories, and ecclesiastical

¹ In fact, however, the fenland yields another type of record, peculiar to the district, the acre book, which is an assessment for sewer tax compiled on a *parish* basis, and listing every acre of land in the parish and the tenants' names. For evidence of land distribution based on surveys, see, for example, Joan Thirsk, *Fenland Farming in the Sixteenth Century*, Occasional Paper No. 3, University College of Leicester, 1953, pp. 39-40.

² For examples of the use of the subsidy assessment, see W. G. Hoskins, *op. cit.*, pp. 127-30; Joan Thirsk, *op. cit.*, pp. 43-4.

returns of population. The progress of enclosure may be judged from the returns of the enclosure commissioners of 1517, 1548, 1565, and 1607,¹ from lawsuits concerning land, from surveys, and terriers (including glebe terriers),² and for the second half of the seventeenth century onwards from formal enclosure agreements, found among family papers or among Chancery Decrees in the Public Record Office.³

A great wealth of material on agrarian matters will be found in lawsuits: in the bills and answers of plaintiff and defendant, and sometimes in enquiries carried out locally by specially appointed commissioners in an effort to reach a settlement. They may describe and account for changes in crop rotations and fallowing, enclosure disputes and agreements, the engrossing of farms, gains of land by reclamation along the coast, losses through erosion, and the improvement of waste, commons, and fen inland. Disputes about broken sales contracts may disclose the most important markets for agricultural produce, and the principal channels of trade with neighbouring counties and London. Areas where the pasture shortage was becoming acute will be disclosed in lawsuits concerning the unauthorized use of commons by outsiders, or the overcharging of the commons by the inhabitants. Since many changes in farming techniques in the course of the sixteenth and seventeenth centuries were due fundamentally to the shortage of land, brought about by the increase of population and the growing commercial incentive to use the land more productively, it is essential to ascertain the urgency of this problem in a region. In some pastoral areas, a grazing shortage was unknown in the Tudor period and the commoners' animals were still unstinted. In others, stints were in operation, but they were generous. In the clay Midlands, however, there were many signs of increasing economy in the use of both arable and pasture. The insufficiency of arable in some townships led to a reduction in the number of fallows in the open fields. Pasture scarcity led sometimes to the introduction of a stint, limiting the numbers of cattle, horses, and sheep which each commoner might keep on the common, or a reduction in the number previously permitted. Sometimes the crisis precipitated the partial or complete enclosure of a village, since enclosure enabled each farmer to use his land as he pleased. Short of this, it might

¹ These records were used extensively in Maurice Beresford, *The Lost Villages of England*, 1954, *passim*, but see in particular pp. 106, 142, and footnotes 1, 2, and 3, p. 423.

² For a description of glebe terriers, see M. W. Beresford, 'Glebe Terriers and Open-Field Leicestershire', *Studies in Leicestershire Agrarian History*, Trans. Leics. Archaeolog. Soc. for 1948, 1949, pp. 77-125.

³ For examples of enclosure agreements enrolled in Chancery, and their resemblance to later Parliamentary enclosure awards, see *Victoria County History of Leicestershire*, II, 1954, pp. 218, 225.

persuade individuals to lay more and more of their arable strips under temporary grass or ley. They were then obliged to tether their animals for grazing immediately their neighbours sowed corn in the remaining strips in the furlong, but neither lost any common rights by the change in land-use, for after harvest both the leys and the grain stubble were thrown open to the stock of the whole town.

For the eighteenth and nineteenth centuries, the evidence of agrarian change is to be found in Parliamentary enclosure awards, land tax assessments, rentals, tithe awards, and crop returns, and in officially printed population censuses, Parliamentary papers on the state of agriculture, agricultural statistics from 1866 onwards, and newspapers.¹

Parliamentary enclosure awards, which may be found in parish chests, among private muniments, or among the records of the Clerk of the Peace, set out all the new allotments of land and the new roads to be made. They have been much studied of late, mainly as a check upon the opinion held by earlier historians such as J. L. and Barbara Hammond that enclosure "broke the back of the peasant community."² The execution of enclosures, their cost, and social consequences have all come under scrutiny. The approach to the last problem has been made by comparing the distribution of land at the time of the enclosure award with that which can be inferred from the apportionment of land tax between 1780 and 1832. The tendency nowadays is to praise the fairness of the enclosure commissioners (Dr J. D. Chambers has gone so far as to call Parliamentary enclosure "a milestone in the recognition of the *legal* rights of humble men"), to treat sceptically the complaints of contemporaries about the high cost of enclosure, and to play down the contribution of enclosure towards the decline of the peasantry. Apart from the fact that enclosure often tended at first to increase, rather than reduce, the number of land-owning peasants, it is now recognized that their decline was already under way in the late seventeenth century. At the same time, it is important to remember that all recent studies of this subject have been of a statistical nature, and have traced the fortunes of classes, not of individuals. They have ignored the personal tragedies of enclosure, with which contemporaries were much concerned, because the administrative documents, while illustrating the transfer of land from one class to another, do not readily disclose, and certainly do not explain, transfers of land within a single class. The peasant, ruined by enclosure, who gave up his holding to another of his class, does not proclaim his tragedy loudly enough to be heard in the pages of

¹ The list of sources described below is of manuscript, not printed sources, which are too numerous to be dealt with adequately here.

² J. L. & Barbara Hammond, *The Village Labourer*, Guild Book edition, 1948, I, p. 101.

the land tax. His story is more likely to be found in the pamphlet literature of the time.¹

Tithe awards, which were nineteenth-century agreements for the commutation of tithes in kind, give the amount of tithable land in the parish, its current use as arable, meadow, or pasture, and the money charge to be borne by each landowner after commutation. When the whole of the parish is tithable, the award gives a complete picture of land use and the size of farms.

During the French wars when the grain shortage and consequent high prices threatened to cause serious social disturbance, crop returns were collected by the Home Office covering the years 1793, 1794, 1795, 1800, and 1801. A full account has been given recently of the origin of the returns, and of contemporary opinions on their reliability,² but although some of the returns have been printed and commented upon, no attempt has been made so far by modern historians to investigate their accuracy. It is known that the total acreage returned for each parish was rarely a complete record of the total land under crops. It is likely, however, that the returns indicate reliably the proportionate importance of each crop.

It is impossible in a short article to give due consideration to all the diverse aspects of change which fall within the province of agrarian history. Some of the problems enumerated here will be found amplified in accounts of regional economies already published. But the study of a fresh district will always prompt new questions or suggest fresh answers to old problems of explaining the seeming eccentricity of local farming practice and social organization. At the same time, the student will encounter problems of interpretation which defy solution until more regional surveys are available for comparison. He will notice more acutely than before the lamentable gaps in our knowledge of even general agricultural trends. Writing on the sixteenth century has so far been almost exclusively concerned with enclosure and rent. The seventeenth century has received hardly any attention: the first forty years have been treated as a tailpiece to the boom of the sixteenth century, the next twenty years as a bleak and barren interlude, and the last forty years as a

¹ J. D. Chambers, 'Enclosure and Labour Supply in the Industrial Revolution', *Econ. Hist. Rev.*, 2nd Series, v, 1953, pp. 319-43, and the works cited in the footnotes. The phrase quoted is on p. 327; W. E. Tate, 'The Cost of Parliamentary Enclosure in England', *ibid.*, 1952, pp. 258-65.

² W. E. Minchinton, 'Agricultural Returns and the Government during the Napoleonic Wars', *Agricultural History Review*, 1, 1953, pp. 29-43. This article lists all the returns in print at that time, to which the following should now be added: R. A. Pelham, 'The 1801 Crop Returns for Staffordshire in their Geographical Setting', *Coll. for History of Staffs.*, 1950-51, pp. 231-42.

period of preparation for the so-called eighteenth-century agricultural revolution. This revolution has been seen only through the eyes of four exceptional farmers, Lord Townshend, Coke of Holkham, Jethro Tull, and Robert Bakewell, and is therefore hopelessly out of focus. Later eighteenth- and nineteenth-century writing has dwelt mainly on the changes in land-ownership effected by Parliamentary enclosure, and on nineteenth-century depressions affecting the corn-growing districts. In a sense, however, local studies have postponed immediate consideration of problems of general development by showing that England has not one agrarian history but many, that the old corn-growing areas of the Midlands are not the whole of England. No new survey of English agrarian society and agriculture will be entitled to the name which does not take full account of the diversified character and fortunes of its many regions.

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The Curving Plough-strip and its Historical Implications

By S. R. EYRE

TO all those who find delight in the changing face of the countryside the problem of locating and delimiting the areas of medieval ploughland is a fascinating one. In spite of all the investigations that have been carried out during the past hundred years, however, the problem remains, in the main, unsolved. In some localities a high degree of certainty may have been reached, but the exact boundaries on the medieval land-use map have yet to be drawn for most of Britain. There is still far too much basic disagreement over the interpretation of evidence for even tentative conclusions to be reached.

Contemporary documentary evidence must, of course, remain the chief source of information, but for two reasons documentary evidence in itself usually fails to provide the required answers. In the first place, it is usually fragmentary and scanty, and secondly the places named in documents often cannot be identified on the present landscape. For this reason archaeological evidence and the evidence of place-names and field-names have all to be taken into consideration. The writer emphasizes that he is fully aware of the necessity for using all available evidence in the study of any one small area and that there can be no easy answers or valid short-cuts in historical geography. This paper merely attempts to examine one approach to the problem which has frequently been overlooked.

The occurrence of ridge-and-furrow on the present landscape has frequently been invoked as evidence of former open-field cultivation, and since there is little evidence of the extension of the open fields after the Black Death,¹ the limits of ridge-and-furrow can thus be held to be the same as the limits of late-medieval cultivation.² Unfortunately, it has been demonstrated quite conclusively that the practice of throwing land into ridge-and-furrow persisted right up to the end of the nineteenth century and even beyond.³ In upland Derbyshire considerable areas of land which were, without doubt, common grazing land until after 1800 are today in ridge-and-furrow.

¹ G. C. Homans, *English Villagers of the Thirteenth Century* (Cambridge, Mass., 1942), p. 85; M. Postan in *Economic History Review*, 2nd Series, II, 1950, p. 221.

² M. W. Beresford, 'Ridge-and-furrow and the Open Fields', *Economic History Review*, 2nd Series, I, 1948, pp. 34-45.

³ E. Kerridge, 'Ridge-and-furrow and Agrarian History', *Economic History Review*, 2nd Series, IV, 1951, pp. 14-36.

Furthermore, huge areas of former arable land in this country, particularly the chalklands and other free-draining soils, have always been cultivated in flat lands, no attempt having ever been made to raise ridges.¹ Finally, there is the obvious point that large areas which were in ridge-and-furrow until

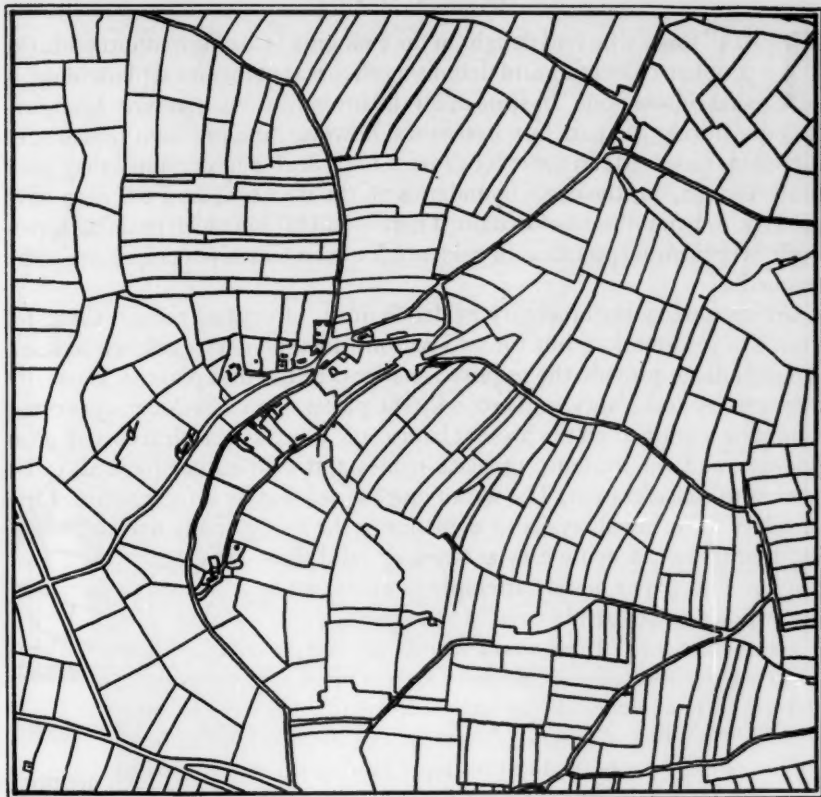


FIG. I

Present-day field patterns near Taddington in north Derbyshire.

the beginning of this century have been levelled since the beginning of the first German war in order to facilitate the cultivation of the land with modern implements. It is clear therefore that an uncritical use of the present distribution of ridge-and-furrow must inevitably lead to most erroneous conclusions.

¹ *Ibid.*, pp. 17-8.

A closer inspection of the form of ridge-and-furrow reveals differences which may be of great historical significance. Some ridge-and-furrow is perfectly straight, but much of it is curved or serpentine in form. Furthermore, wherever the curved ridges have persisted, unmodified, through the cen-



FIG. II

Present field patterns around Wadshelf in the parish of Brampton near Chesterfield.

turies, they have exactly the same form when viewed in plan. They are not in simple curves, nor are they S-shaped; they are always in the form of an elongated and reversed letter S. Not a single example of a complete furlong composed entirely of well-formed S-shaped ridges has been seen by the writer in this country, whereas hundreds of blocks of reversed-S ridges have been examined. Locally in Germany attention has been drawn to abnormal S-shaped furlongs, but here again the vast majority are of the orthodox form. The anomalies are thus so few in number that they can be ignored in the present study, though, as will be seen below, their significance in a study of the evolution of farming technology must not be underestimated.

An examination of the open fields shown on manorial plans of the sixteenth, seventeenth, and eighteenth centuries reveals that in most cases large numbers of the strips had exactly the same form as the curved ridge-and-furrow. Indeed, even in those fragments of the open fields which have per-

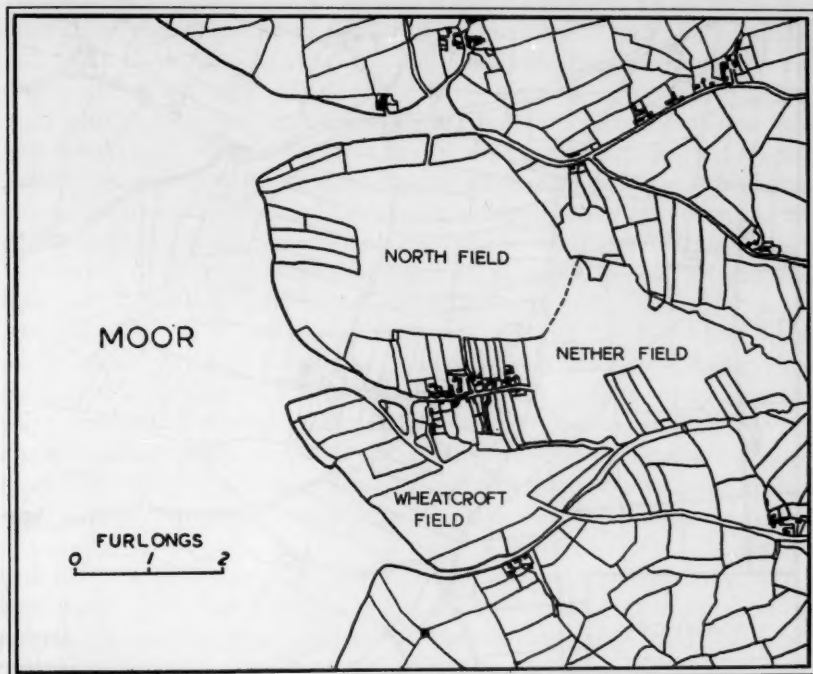


FIG. III.

Plan of Wadshelf and the surrounding area immediately prior to the Parliamentary Enclosure Award of 1827.

sisted into the twentieth century, as at Laxton and Epworth, strips of this form can still be observed.

Finally, in many parts of northern England, particularly in upland areas, exactly the same form is seen, repeated many thousands of times, in the field boundaries. It is particularly frequent in north Derbyshire, where many hundreds have been investigated¹ (Figure I), but it is also found occurring

¹ S. R. Eyre, 'A consideration of the factors limiting land-improvement and settlement on the upland east of the Derbyshire Derwent', Ph.D. thesis, University of Sheffield, 1954 (unpublished).

in greater or lesser numbers in Yorkshire, Durham, and north Nottinghamshire. Indeed, isolated groups of such field boundaries can be found in most counties in England, Wales, and southern Scotland.

It seems logical to suppose that so widespread and constant a form must be evidence of a pattern of activity which was, at one time, at least as widely distributed. The occurrence of the reversed-S pattern may thus be of much greater historical significance than that of mere ridge-and-furrow. The first obvious deduction is that since many open-field strips and much extant ridge-and-furrow have this form, the ploughman, at one time, must have found it convenient to plough furrows of reversed-S shape. The reason why some field boundaries possess the same form is not so immediately obvious, but ultimately has even deeper implications. It has been shown that many fields in north Derbyshire which have such boundaries have names which have usually been accepted as evidence of former open-field cultivation.¹ These fields have such name suffixes as "—furlong," "—flatt," "—town-field," and "—dole." On the other hand, there are, in the same locality, fields called "—intakes" which were all situated around the fringes of the commons at the time of the parliamentary enclosure awards. These fields had obviously been assarted from the waste at a relatively late stage prior to parliamentary enclosure, and the complete absence of the reversed-S form in their boundaries is quite striking. The inference that the fields with such distinctive boundaries were once parts of open fields is thus almost inescapable.

Wherever such field boundaries occur it would appear therefore that they are evidence of the piecemeal enclosure of former open fields. Strips were enclosed as they lay in the open fields, probably in most cases after a certain amount of exchange and consolidation. No recasting of the former pattern of strips and furlongs occurred, so that today this pattern lies fossilized in the field boundaries. In the township of Brampton, near Chesterfield, this process was arrested, almost at the half-way stage, by the parliamentary enclosure award of 1827 (Figures II and III). Here the contrast between the curved boundaries of the islands of ancient enclosure and the straight-sided pattern of the parliamentary enclosures is apparent.

A careful examination of ancient tracts on agriculture from the time of Walter of Henley onwards has yielded no direct explanation for the form of the ancient ploughlands. Just as, in all probability, no modern farming journal would ever feel it necessary to provide space for explaining why modern farmers prefer to plough in a straight line, so no medieval writer ever seems to have felt impelled to explain a practice for which the reasons

¹ S. R. Eyre, *op. cit.*

must have seemed equally obvious. Because of this, writers during the past half-century have been forced into speculation, but only two hypotheses have ever achieved any degree of popularity. It was held by some that the lands were curved so that water draining into the furrows should not flow off so rapidly as to cause serious soil erosion. This hypothesis never achieved a great following, however, and it is obvious that if it were the true reason, an S-shaped curvature would have been just as efficient as a curvature of reversed-S form. Apart from this, the way in which the curved strips ran sometimes up and down, sometimes directly across and sometimes obliquely to the slope of the ground indicates that the curvature of the ridges can have had nothing to do with drainage.

The second hypothesis has come to be held by a number of eminent social historians. It is pointed out that the long medieval plough-team of eight or more oxen yoked in pairs must have been a most cumbersome one to turn at the end of the furrow, and because of this the ridge had to be curved. Even this, however, is not a complete explanation of the characteristic form of the plough-strips. Homans maintained that with a long plough-team, it was "... only natural ..." that the ploughman should begin to turn the team before the plough reached the end of the furrow, and consequently the land gradually became curved at its ends.¹ This explanation assumes two points: first that the land, as initially laid out, was perfectly straight, and secondly that the plough-team was turned right round to the LEFT at the end of the furrow. As will be seen below, neither of these points can be conceded.

The reason given by the Orwins for the curvature of the land is now the one which is almost universally accepted.² They point out that a long plough-team ploughing a straight furrow would need a very wide headland on which to turn. This would have entailed a large amount of waste land, or at least it would have involved the inconvenience of a great deal of badly poached land which could not be cultivated until the ploughing of the main furlongs was completed. This was obviated by having the lands curved at their ends so that the whole team of oxen could continue to pull its weight until the plough itself reached the end of the furrow. At the same time all the oxen could walk out on to a narrow headland at right angles to the general alignment of the strip. When this was completed the front oxen could be led round to re-enter the land. The headland thus needed to be no wider than the width of four oxen.

Unfortunately the above explanation attempts no step-by-step explanation of the processes involved. In particular, it does not explain why the

¹ G. C. Homans, *op. cit.*, p. 50.

² C. S. & C. S. Orwin, *The Open Fields*, Oxford, 1938, p. 34.

curvature of the end of the furrow was almost invariably to the left and not to the right. Bearing in mind the construction of the plough and the form of the ridge, however, one can see why curvature to the left was a necessity. In the first place, throughout the past thousand years of farming in this country, and possibly long before that, the mouldboard has always been on the right-hand side of the plough: the furrow slice has thus been turned over towards the right.¹ It is true that the turn-wrest plough with its transferable share is of great antiquity, but as far as is known at present, down to the last two hundred years it was of purely local occurrence in south-eastern England. There can thus be little doubt that, in spite of the immense number of local variations in plough construction, the vast majority had a fixed share and mouldboard on the right-hand side.

In the second place, we know that medieval plough-lands commonly took the form of high-backed ridges, this being the method by which cultivated land in this country was effectively drained before sub-surface drainage became a common practice in the nineteenth century. There is certainly incontrovertible evidence that the lands were left flat on many areas of good free drainage, such as the chalklands of the south and the Lincolnshire and Yorkshire Wolds,² but though extensive, such areas appear to have been in the minority in Britain. The only method of ploughing a land in order to produce a ridge was to turn all the furrows inwards. This process was called "filling" or "gathering."

If the above facts are considered together, it becomes obvious that the only way to "fill" a land was to plough round it in a clockwise direction beginning near the centre and working outwards. This means that the turning about at the end of the furrow was ultimately to the RIGHT and not to the left as the curve of the strip might suggest. It might be objected that there is no proof that one ridge was completed at a time; is it not possible that the ploughman would plough up the side of one 'rigg' and back down the side of another as is frequently done at the present time? There are two reasons for believing that this was not a common practice. First, Walter of Henley stated quite clearly that the way to plough a land "forty perches by four" was to "go round it thirty-six times." Secondly, many strips shown on manorial plans of the sixteenth and seventeenth centuries are so narrow that they cannot have consisted of more than one ridge, and it seems reasonable to suppose that in most cases, at least, each man's strip would be ploughed as a unit.

¹ F. G. Payne, 'The Plough in Ancient Britain', *Archaeological Journal*, CIV, 1948, p. 82.

² W. Mavor, *General View of the Agriculture of the County of Berkshire*, 1813, p. 160; J. Tuke, *General View of the Agriculture of the County of York, North Riding*, 1800, p. 103.

Bearing in mind the above points, there appear to be very good reasons why the ploughman should have required curvature to the left at the end of the furrow. It must be remembered that the ridges were frequently very high and steep-sided; they were in fact referred to as "high-backs" in many counties. It was said, for instance, that in Gloucestershire "... a person six feet high may stand in some of the furrows and not be able to see the top of the second ridge from him."¹ These were probably higher than the average, but observations from other counties show that they were not unique. Height differences of three or four feet between the crests of the ridges and the bottoms of the furrows were commonplace. Such heights were necessary on heavy soils, particularly for the growing of wheat.² A ploughman in the last stages of 'filling' a land would thus be turning a furrow uphill on a quite considerable slope, encountering all the difficulties that that implies. Any one who has ever attempted to plough across a steep slope will be aware that when the furrow slice is being turned uphill the greatest difficulty is experienced in preventing it from falling back into its original position. Indeed, it is almost certainly because of this difficulty that the lynchets of our upland areas were made. The problem is aggravated if, for any reason, the direction of the plough deviates sharply to the right. If this is allowed to happen, the rear end of the mouldboard draws away from the slice which it is in process of turning over and the latter almost certainly falls back. With a swing to the left at the end of the open-field ridge, the ploughman was able to keep the mouldboard pressed against the furrow slice during the period when the plough-team was performing its sharpest turn out on to the headland. The inevitable swing to the right when the land was re-entered was not so difficult to negotiate since the oxen had all entered the land and were pulling steadily before the plough was set in the new furrow. No sharp twist to the right would thus be experienced.

The task of manœuvring the plough-team on the headland would also have been a much longer and more difficult operation had the ridge been curved to the right instead of to the left. As it was, the ploughman, when 'filling' a land, was able to halt his plough immediately it reached the end of the furrow and still allow plenty of room for the front oxen to be led back, unhindered, into the required position for ploughing the next furrow (Figure IVA). If the ridge had been S-shaped, the plough would have obstructed the returning oxen, which would have been forced to pass between it and the ends of the ridges, a most cramped and awkward procedure (Figure IVB). The only method of circumventing this difficulty would have

¹ T. Rudge, *General View of the Agriculture of the County of Gloucester*, 1813, p. 103.

² W. Marshall, *The Rural Economy of Gloucestershire*, 1776, II, p. 42.

been to take the plough a considerable distance along the headland and thus leave the end of the ridge open for the returning oxen.

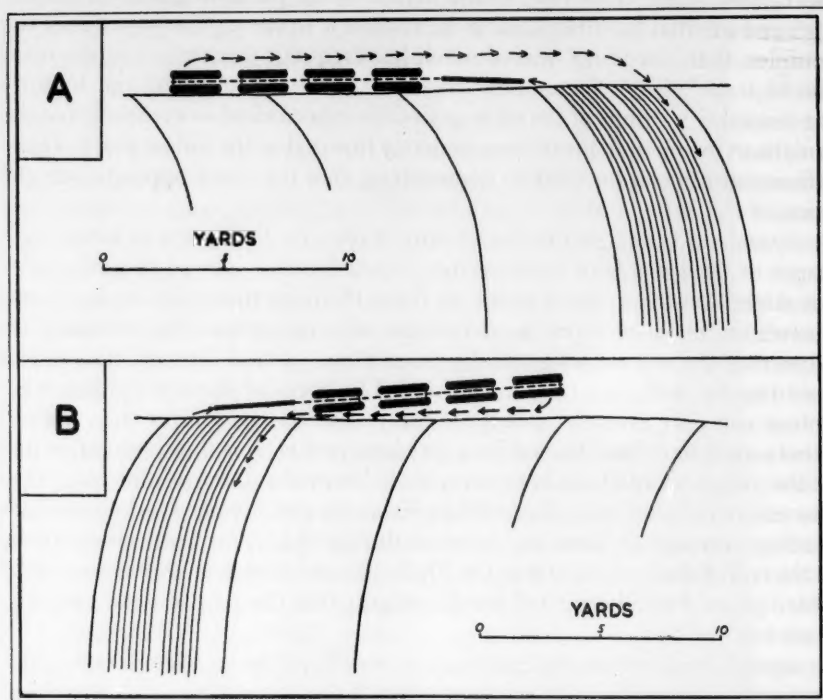


FIG. IV

A. Diagram to show the position of a plough-team of eight oxen immediately after completing a furrow. B. Diagram to illustrate the difficulties that would be encountered in turning at the end of an imaginary ridge with S-shaped curvature.

The above reasons seem sufficient to account for the characteristic form of the plough-strips. The assumption has been made, however, that 'filling' the land was the dominant ploughing operation in the open fields. To what extent would the above arguments be affected if 'splitting', 'cleaving', or 'shedding' was equally important? Quite obviously, in order to 'shed' a ridge, ploughing would have to begin on its flanks and the team would have to move in an anti-clockwise direction. Even if this occurred frequently, however, it does not invalidate the first reason given above. No difficulty would ever be experienced in making the furrow slices fall outwards whichever way the 'tail of the plough' was swinging. If 'shedding' was just as

frequent an operation as 'filling', however, the second reason is invalidated; all the difficulties in turning which were obviated by the reversed-S form when ploughing clockwise, would accrue when ploughing anti-clockwise. In spite of what has been said to the contrary, however, the writer is of the opinion that 'shedding' was of much less frequent occurrence in the open fields than 'filling'. Statements made in the County Agricultural Reports and in other writings of the same period have been cited as evidence that the ridges in the open fields were completely lowered in the fallow year.¹ These same sources can be used to demonstrate that the exact opposite was the case.

Time and time again in the County Agricultural Reports references are made to the hazards of levelling the "old-fashioned" curved ridges in order to straighten them, lower them, or make them narrower. In Buckinghamshire, for instance, even good farmers who recognized the necessity for lowering the old ridges gradually, sometimes carried through the process too rapidly, with resulting infertility.² The cores of these old ridges were obviously very infertile, and there can be but one reason for this: the soil there must have been buried for a very long period. It is thus impossible that these ridges should have been completely lowered and remade every third or fourth year, as has been suggested by Kerridge and others.³ It is known that a certain amount of 'cleaving' went on during the fallow year, since among others Marshall refers to it in the Midlands and Rudge in Gloucestershire,⁴ but the evidence here cited would suggest that the ridges never lost their identity.

Apart from the above argument, it is difficult to see how "serpentine" strips could possibly have survived in that form if they were being completely obliterated at regular intervals. It is particularly difficult to see how complete obliteration could have occurred in those areas where no balks separated the strips. During the eighteenth century, when all farmers seemed to desire straight ridges, it seems obvious that they would soon have altered the ancient curved pattern had they been completely lowering the ridges at frequent intervals. Nevertheless the curved strips persisted.

The process of 'shedding' must therefore have been of much less frequent occurrence in the open field than that of 'filling'. The action of rain-wash

¹ E. Kerridge, *op. cit.*, pp. 16-7.

² St J. Priest, *General View of the Agriculture of Buckinghamshire*, 1810, p. 140.

³ Robert Aitken, 'Ridge-and-furrow', correspondence in *Geographical Journal*, CXX, June 1954, p. 260.

⁴ W. Marshall, *Rural Economy of the Midland Counties*, II, 1796, p. 227; T. Rudge, *General View of the Agriculture of the County of Gloucester*, 1813, pp. 106-7.

and the trampling of animals must have caused a considerable movement of soil down the steep sides of the ridges, so that much more 'filling' than 'splitting' was necessary to maintain them at a constant height. Because of this, it was more convenient to have curvature to the left at the end of the ridge than curvature to the right.

The important problem now arises: how can this distinctive pattern be used in historical geography? Can it be shown that plough-lands with this form could have arisen only in open-field cultivation, and, furthermore, can the origin of such plough-lands be assigned to a particular period in history?

The first part of this question is easily answered. New enclosures were assarted from the waste in late medieval times and farmed in severalty from the outset. There is no conceivable reason why these should have been constructed with their long boundaries in the form of a reversed-S. A brief consideration of the movements of a large plough-team on the headlands shows quite clearly that the surrounding walls of a close would have inhibited the very movements which the form was designed to permit. Closes which today are found to have the fences on opposite sides parallel with one another and with the reversed-S curvature must therefore have arisen by the enclosure of open-field strips.

The problem of the age of the reversed-S forms is a more difficult one, but a study of literary and documentary evidence leads one to almost inescapable conclusions. In the first place, the attitudes of agricultural writers in the late eighteenth and early nineteenth centuries are instructive. Thomas Batchelor remarked that "... all the clay land in the county is in the state of high ridge and furrow bent at the ends into a serpentine form, by some uniform cause, which, in the course of many centuries, has removed the ends of the lands out of their original places."¹ Bailey and Culley noted that "... on the deep-soiled lands, that were used for arable some centuries since, the ridges are mostly very high, broad, and crooked; upon lands that have recently been brought into cultivation, they are straight. . ."² Arthur Young saw that near Skipwith the "old highlands" were being ploughed down because "... they were of bad form, too high for the breadth . . . crooked, and wider at one end than the other."³ Finally the writer of *British Husbandry* referred to ridges in many old enclosures as being "... ploughed time out of mind in a variety of uncouth shapes."⁴ Similar reports, all in the same tone, were made for counties in all parts of England and southern

¹ *General View of the Agriculture of Bedfordshire*, 1808, p. 279.

² J. Bailey and C. Culley, *General View of the Agriculture of Northumberland*, 1805, p. 66.

³ Arthur Young, *General View of the Agriculture of the County of Lincoln*, 1799, p. 94.

⁴ *British Husbandry*, 1837, p. 47.

Scotland, and several clear inferences can be drawn from them. First, there was a distinct correlation between the distribution of crooked lands and the distribution of the better, deep-soiled lands which had long been in open-field cultivation. Secondly, the enlightened farmers had a complete contempt for the curved lands and were anxious to get rid of them wherever possible. The curvature of the ridges by this time performed no useful function and the form was thus completely obsolete. Finally, not only was the "old-fashioned" ridge obsolete, but the farmers were at a loss to understand why men should ever have created such lands. Knowledge of the former function of the curvature of the ridges was lost in the mists of antiquity.

It is therefore apparent that long before the end of the eighteenth century men had ceased to make new curved ridges. When new ridges were made in the seventeenth and eighteenth centuries they would be straight unless the long boundaries of the close containing them had the characteristic curvature of the ancient plough-strips, in which case the new ridges might be made parallel to the fences. In the latter case, however, the curvature of the field boundaries is clear evidence that the land within the close was initially part of an open field.

The origin of the curvature must therefore be assigned to an earlier period, for which manorial plans provide valuable evidence. Documents such as the 1635 plan of Laxton¹ show that many strips were curved but that a considerable proportion were perfectly straight. It seems possible therefore that as early as the beginning of the seventeenth century the curved form had long been obsolete and that new straight strips had, in places, replaced the old curved ones.

The above hypothesis is however open to an obvious objection. How can one be sure that the straight strips were not just as old as the curved? Is it not possible that, at the outset, there were some curved ridges and some straight ones? A further study of early manorial plans provides the probable answer to this objection. The straight strips are found to be, on the average, much shorter than the curved ones. Furthermore, in many of the furlongs of straight strips the alignment of the strips was parallel to the SHORT axis of the furlong. This suggests that the straight strips had arisen as a result of complete reorientation; the land had been levelled and new strips created at right angles to the old. This view is strengthened by the fact that many of the headlands of these reorientated furlongs were curved in the characteristic form. An admirable example of this is found on the manorial plan of Lower Heyford in Oxfordshire,² dated 1606, where, in the East Field, two of the

¹ Orwin, *op. cit.*, at the end, Diagrams I to V.

² J. A. Venn, *The Foundations of Agricultural Economics*, Cambridge, 1933, Plate II, p. 34.

original strips had been left as headlands or access strips but the original central strips had been erased and new shorter ones created at right angles to them (Figure V). There is thus very strong evidence indeed to suggest that the straight strips post-date the curved ones.

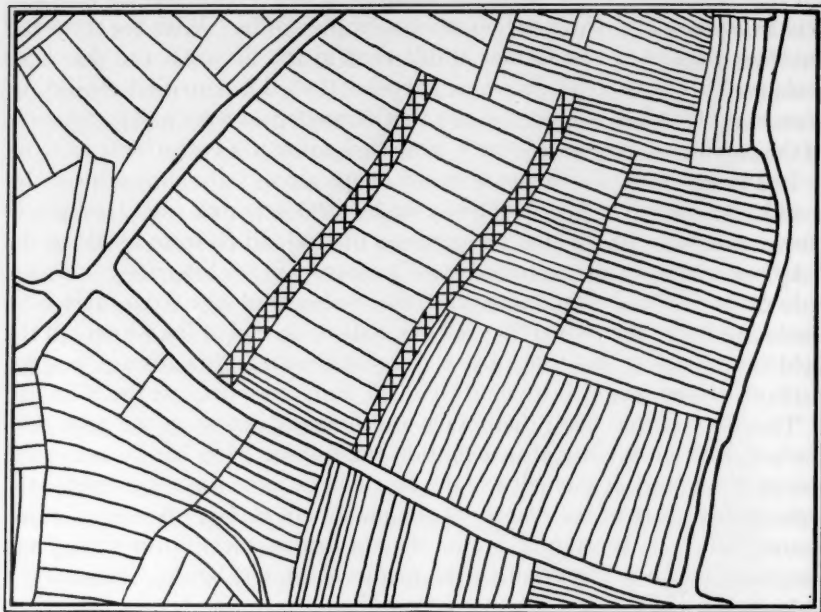


FIG. V

Part of the East Field of Lower Heyford, Oxfordshire, in 1606. The old curved strips which now served as access strips and headlands are cross-hatched.

Since manorial maps of the first half of the seventeenth century covering areas in many parts of the country show the presence of these short, straight strips, there is every reason to suppose that the reversed-S shape was obsolete even by 1600. Since it is, in the main, agreed that there was no enlargement of the open fields in most parts of the country after the great plagues of the mid-fourteenth century, it can be argued that the incidence of curvature be it in ridge-and-furrow and field boundaries on the present landscape or in the form of the strips shown on manorial plans, is evidence of medieval ploughing.

No indication has yet been given to explain why the reversed-S form should have become obsolete at the end of the medieval period. Improvements in farming technique certainly occurred in early Tudor times, how-

ever, and if it can be shown that this made the long plough-team unnecessary, then one can be certain that curvature of the strip was no longer required.

The shortage of winter fodder was one of the main problems of the medieval farmer. The extremely high value of stunted meadow land as compared with that of arable land is evidenced in many medieval surveys and proves beyond doubt how precious were supplies of hay. With the throwing down to grass of much former arable land in the fifteenth and sixteenth centuries it seems reasonable to suppose that this situation would be greatly improved. It is most unlikely that summer pasturage and numbers of livestock could have been greatly increased without a concurrent increase in the hay harvest. This almost certainly happened with the large-scale early-Tudor enclosures in the Midlands, and recent research into Derbyshire court rolls has revealed that many pieces of land which were arable in the fourteenth century were referred to as "pastures" in the fifteenth.¹

Because of the shortage of fodder, the medieval plough oxen must have been extremely weak when they left the stall at the end of the winter. In the nineteenth century this time of year was still known as "the lifting" in some parts of Britain, and it is thought that this term arose because the oxen had actually to be lifted from their stalls and dragged out on to the pastures.² Only a week or so after this operation these same oxen had to begin the spring ploughing. It is small wonder that a large team was required for the task. In his study of the history of the manors of Ramsey Abbey Homans found that "... more men joined together in partnership in spring and summer than in winter, that is, the medieval winter, before Christmas."³ It seems possible, therefore, that a long plough-team may never have been absolutely necessary for the autumn ploughing. If, therefore, the winter nourishment of the oxen was greatly improved at the end of the medieval period, there is reason to suppose that the average plough-team may have been much reduced even for the spring ploughing.

In any case, great changes in the actual breed of oxen are known to have taken place in early Tudor times. Medieval cattle appear to have been relatively small. Thus all the cattle skeletons found in the medieval ditches in Cambridge appeared to be of the *longifrons* breed, representatives of which are today found locally in Ireland and western Britain.⁴ According

¹ S. R. Eyre, *op. cit.*

² Nigel Harvey, *The Story of Farm Buildings*, Young Farmers Club Booklets, No. 27, 1953, p. 11.

³ G. C. Homans, *op. cit.*, p. 77.

⁴ T. McKenny Hughes, 'On the more important breeds of cattle which have been recognized in the British Isles', *Archaeologia*, 2nd Series, v, 1896, pp. 153-8. T. McKenny Hughes, 'Medieval Ditches of Cambridge', *Proceedings of the Cambridge Antiquarian Society*, 1892 and 1893, p. 52.

to data collected by some historians "... oxen, cows, and steers of the fifteenth century were no more than a third of their present bulk."¹ Since there is evidence that much heavier cattle from the Low Countries were imported in early Tudor times, here is another possible reason why the long plough-team may have ceased to be an absolute necessity.

Though the presence of the reversed-S pattern on the landscape can be used as evidence of medieval ploughing, the absence of such a pattern demonstrates absolutely nothing. Both ridge-and-furrow and field boundaries may have been straightened or completely obliterated by various processes, and furthermore, it is still quite possible that in some areas no such form was ever used. In any case no significance should ever be attached to an isolated field boundary of reversed-S form. By sheer chance many of the assarts made in late medieval times must have had single boundaries of this form. It is only when a group of such forms are found *en échelon* that they should be regarded as useful evidence.

Finally, even when all the above provisos have been observed, an uncritical application of this technique is still to be deprecated. No conclusions about the distribution of medieval ploughlands should ever be reached without full reference to all other possible sources of evidence, documentary, archaeological, and philological.

¹ W. Denton, *England in the Fifteenth Century*, London, 1888, pp. 171 and 309.

Notes and Comments

THE JOHN NICHOLS PRIZE

The University College of Leicester offers an annual prize, open to graduates of any university, and also to candidates who are not members of a university, for an essay on some topic of English local history. Candidates may write on a subject of their own choice, provided that such subject has been previously submitted to and approved by the Head of the Department of English Local History. Compositions which have already been published, or which have been awarded any other prize, are not eligible.

The value of the prize is £25. The College

reserves the right to make no award if no essay of sufficient merit is submitted. The College also reserves the right, but does not bind itself, to publish the winning essay in printed form.

The essay must be an original contribution to knowledge, based on genuine research. It must be typewritten, and must not exceed 20,000 words in length. It must be submitted, with a stamped, addressed envelope for return, on or before the 31st of March 1956. Communications, marked "John Nichols Prize," should be addressed to The Reader, Department of English Local History, University College, Leicester.

Crop Nutrition in Tudor and Early Stuart England

By G. E. FUSSELL

RECORDS of actual farming practice in Tudor and Stuart England are scanty. A few farm accounts and diaries describe the day-to-day activities of their writers. The number of such writings as yet printed or recorded is small, though there is every promise that many more may be found by local archivists. Their evidence can only be indications of what may have been done more widely than on the particular farm, or in the locality where the farmer lived. Something, too, can be indirectly gained from the inventories attached to contemporary wills or from court rolls that sometimes lay down rules for the management of the manorial lands, but necessarily little about the use of manure.¹ Contemporary didactic textbooks on farming are at present the most direct source of information. These make little or no reference to theory. If there can be said to have been any theory, it is confined to authoritative assertions, unsupported by any experimental evidence until the beginning of the seventeenth century, when Sir Hugh Plat, Francis Bacon, and Gabriel Plattes made the earliest attempts to combine science with practice.

Textbook evidence must be used with caution. It is now difficult, if not impossible, to decide whether the systems the books recommend were actually practised, and, if so, by what proportion of the farmers. Often the teaching is derived from classical sources, as might be expected, and serves to indicate the continuity of farming ideas during many centuries. They may not have been the actual practice at all, or only in limited areas and on particular farms. Only when a writer states that some practice was customary in a named place is it certain that some farmers actually worked in that way.

The fertilizing resources of the Tudor husbandman were strictly limited. Animal excrement, vegetable waste, and the mixing of soils made up the complete list of his manures. The use of these materials had been common practice for centuries. The Greeks believed that the use of dung as a fertilizer originated in the labours of Hercules when cleansing the Augean stables.

¹ G. E. Fussell and V. G. Atwater, 'Farmers' Goods and Chattels', *History*, N.S. XX, 1935, pp. 117-23; W. G. Hoskins, *Essays in Leicestershire History*, Liverpool, 1950, pp. 123-83.

Later Columella expressed the opinion that manure was the thing of greatest value to the farmer and ought to be studied with the utmost care. The ancient authors on whom he relied had not altogether neglected it, but had discussed the subject with little elaboration.¹ As much or as little could be said for the intervening centuries.

Supplies of dung were very scanty in the early sixteenth century. The livestock were poorly fed and spent much of their time at open range on the common waste, where a good deal of the excrement was voided and so lost to the individual farmer. A small supply was accumulated when the beasts and horses were stabled for the night, or kept in houses or stalls during the winter. This was so exiguous that it was considered good practice to mix it with fresh earth. The crop nutrients did not then get buried so deeply in the soil as to be wasted. It would lie close to the seed as it ought. The sheepcote, too, must be cleaned out every fourteen days and the muck mixed with earth, clay, or ditch mud. Straw or chaff should also be mixed in the heap, and if any could be spared from animal feeding, it should be put in the sheepcote where it could be trodden and mixed with droppings and urine and rot down. Both cowstall dung and this material should be gathered in a heap for future use.²

It was ordinary usage for the sheep to be grazed on the common waste during the day and confined in the cote or fold for the night. A careful farmer would not let them out at once in the morning. He let them stand till they had voided, and thus conserved the manure in a place where it was to his hand, not dropped all over the common grazing. If he had an enclosed fallow field he was advised not to fold the sheep, but to put them into the enclosure. A few stakes driven into the ground here and there encouraged them to rub themselves, and the shepherd drove them about so that their droppings were scattered over the area.³

Every one agreed that this manure ought to be spread on the second ploughing. It was usual to give the corn land three ploughings during the fallow year, both for wheat and barley. If put on before the first stirring the manure would be buried too deep to do any good. After the first was the best time. The second ploughing would then bury the muck, and the third would mix it well with the top soil so that it would lie close to the seed after it was

¹ *De Re Rustica*, ii, 13.

² *Boke of Husbandry*, attrib. to Bishop Grossetete, printed by Wynken de Worde, 1510, reprinted in Francis Cripps-Day, *The Manor Farm*, 1931, chap. ix. Cf. I.B. (James Bellot), *The Book of Thrift*, 1589, *ibid*.

³ *Boke of Husbandry*, 1523, in *Certain ancient tracts concerning the management of landed property* reprinted, 1767, pp. 19, 20.

sown. The importance of placing the manure close to the seed was already recognized.¹

Fitzherbert realized that the ordinary farmer was often unable to accumulate sufficient dung to treat all his arable generously. If a man found himself in these circumstances the best thing to do was to plough down his ridges and make them where the draining furrow had been. Alternately he could make two ridges into one, or three into two. "And so shall he find new mould that was not seen in an hundred years before, the which must needs give more corne than the other did before."² He was a little optimistic. It was not improbable, as some discovered later, that this process would turn up the sterile subsoil, and reduce yields rather than increase them.

A more certain supplement to a farmer's supply of animal manure was vegetable waste compost. This had been recommended by the classical authors and the recommendation was repeated by contemporary writers. Whether it was at all generally followed is difficult to determine.

Cato informed his readers that it was possible to make manure of litter, lupine, straw, chaff, bean stalks, husks, and the leaves of ilex and oak. Columella advised farmers who could not keep livestock to collect leaves and rubbish from the hedgerows and droppings from the highways, and to cut fern from their neighbours' land. This material, with the sweepings of the courtyard, ashes, sewage from the house, and straw, was to be hoarded in a pit. Every waste thing ought to be swept into it. In the midst a piece of oak must be buried to prevent snakes lurking.³ This was good advice. Richard Surfllet recognized it and repeated it in 1600, even unto the piece of oak driven into the midst.⁴

The practice of mixing soil with animal excrement took special form in some areas. In Essex it was usual to plough up the headland, or to dig it up with spades, and throw it up in hillocks before the winter. Layers of dung were put upon each layer of earth, and the rain, snow, and frost rotted the whole down into a useful compost. The horseman was exhorted not to forget the heap. This material was thought very suitable for the barley crop which was extensively grown in East Anglia. If it was not done the headland was so much waste space.⁵ This system was known as windrowing, and was still used in the middle of the nineteenth century.

¹ Fitzherbert, *ibid.*, p. 18; *Surveying*, 1523, *ibid.*, p. 77; Thomas Tusser, *Five Hundred Points of Good Husbandry*, 1577, ed. by William Mavor, 1812, pp. 106, 155, 174, 180; James Bellot, *op. cit.*, 1589; Anon, *God speed the plough*, 1601, ed. with an introduction by J. Christian Bay, 1953.

² *Surveying*, *op. cit.*, p. 78.

³ Cato, *De Agricultura*, xxxvii; Columella, ii, 14; Varro, trans. by Lloyd Starr-Best, 1912, p. 82.

⁴ Richard Surfllet, *Maison Rustique or the Country Ferme*, 1600, p. 67.

⁵ Tusser, *op. cit.*, pp. 51, 52, 101.

On the opposite side of the country Cornish farmers made the mixture with sand from the seashore. This was doubtless more profitable because the sand, mixed with shells, was highly calcareous. They called the process making their sand ridge. William Carnsew of Bokelly did it in June. He built up a large pile of sand, and towards the end of the month added thirty loads of dung a day.¹ It is probable that he added sand in layers as the Essex men did in windrowing, although he does not specifically say so.

Farmers who lived within a dozen miles or so of the coast, particularly in the south-west, habitually collected sea sand for use as a fertilizer. Often it was used unmixed, but no doubt some dung was also spread so that the two were added to the soil, though not in such a well mingled condition as if made into a sand ridge. Pure sea sand was spread on the soil by Cornish farmers at the rate of sixty sacks an acre, two of which made a horse load. Many doubled that number. Those who lived further inland on better soil were content to sow sand almost as thin as their corn.²

In the south-western counties and in other parts of the country where convertible husbandry was practised, the matted grass was cut off in turves when the ley was broken up. The turf was pared off with a mattock or with a breast plough, and piled on the edge in heaps to dry. When thoroughly dry the turves were burned into ash. This practice, being very common in Devonshire, was known as 'denshiring'.

In Cornwall the heaps of ash were mixed with sand heaps and the whole ploughed into the land,³ but the farmers of more inland counties, like Surrey and Shropshire, simply spread the ash and ploughed it in before sowing a crop of rye or oats.⁴

Earth dug out from the ditches and ponds, road scrapings—on the dirt tracks of the day these were a mixture of soil and animal droppings—household dirt, and the ashes of wood fires were all materials that the careful farmer added to his manure heap. Much of this material, especially the calcareous 'creech' derived from the shelly river beds of East Anglia, contained valuable plant nutrients, though the farmers who used them would have been at a loss to say what they were.

All this, coupled with the advice handed down from classical times, suggests that it may have been usual to add leaves and other vegetable waste to

¹ A. L. Rowse, *The Age of Elizabeth*, 1950, p. 103.

² Hugh Plat, *The Jewel House of Art and Nature*, 1594, p. 42; Richard Carew of Antony, *The Survey of Cornwall*, 1602, ed. by F. E. Halliday, 1953, p. 102.

³ Carew, *op. cit.*, p. 82.

⁴ John Norden, *The Surveyor's Dialogue*, 1607, pp. 202, 227; Ernle, *English Farming Past and Present*, 1932, p. 107.

the dung or compost hills in the manner of which Sir Albert Howard was so strong a modern protagonist. At least one gentleman was in the habit of doing this. Barnaby Googe, a Lincolnshire squire, customarily threw twigs, boughs, and straw on the manure heap to help it out.¹ He can hardly have been the only farmer to do so.

Fitzherbert mournfully remarked that he had observed many disused marl pits in open fields. None of the open-field farmers bothered to dig marl and spread it in the early years of the sixteenth century, so far as he could judge. There was a very good and sufficient reason for this. The tenants would not improve their land by this process because they feared that their landlords would demand higher rents. They were not lazy or ignorant, merely prudent. Fitzherbert was convinced that marling well done would keep the soil fertile for twenty years.²

The practice was certainly resumed, if it had ever been completely interrupted, by the end of the sixteenth century, though it may not have been done on the old arable of the open fields. It was probably done more readily on land ploughed out for a few years' cropping and returned to ley, in those counties where the convertible husbandry was usual. Farmers in such widely separated places as Lancashire, Cheshire, Salop, Somerset, Middlesex, Sussex, and Surrey marled their land.³

Gervase Markham was a real enthusiast for using marl. He recalled Pliny's statement that the Britons used marl and that it was mentioned in books of gainage or husbandry written in the days of Edward II, as well as by Walter of Henley. Markham himself describes how it was used by Kentish farmers when bringing areas of Wealden land into cultivation. The quantity of marl used varied widely on different soils—as was wise. Marl was not, he said, good upon clay land. Since the purpose of marling was to improve the texture of light land, this is readily comprehensible. On sandy or hazelly land five hundred cartloads, containing from ten to twelve bushels each, could be usefully spread. The Kentish acre was 160 rods of 16 feet. After applying the marl, this land might be ploughed and wheat sown, but some farmers broke up the grassland and took a crop of oats. After this they spread the marl and sowed wheat. Land treated in this way must not be harrowed down fine. Only one or two crops were taken, and then it was let fall down to grass for five or six years. Markham rather optimistically said that "all this time it will beare a very good and sweet Pasture, well set with a white Clover, or three leaved grasse, most fatning and profitable, both for Sheepe and Bullocks." When the appropriate time had passed the ley was broken up again

¹ Barnaby Googe, *The whole art and trade of husbandry*, 1614, p. 12.

² *Surveying, op. cit.*, p. 82.

³ John Norden, *op. cit.*, p. 227.

for two or three years' crops. Under this system the effects of marling could be enjoyed for some thirty years, but if too many successive crops were sown it would be exhausted in five years.

Four sorts of marl were found in the Weald, distinguished by their colours, grey, blue, yellow, and red. Their order of merit was blue, yellow, grey, and red. All were good material if as slippery as soap.¹

Little definite can be learned about the use of chalk, but it was probably used in the compost heaps, if not otherwise. In chalky soils the material dug to mix with dung doubtless contained a mixture of chalk. It may, too, have been used by itself as a fertilizer. Barnaby Googe warned his readers about it. "In some countries," he wrote, "they make their land very fruitful with laying on of a Chalke. . . But long use of it in the end, brings the ground to be starke nought, whereby the common people have a speech, that ground enriched with Chalke makes a rich Father and a beggerly Sonne."²

It is clear that by the end of the sixteenth century lime was burned in some parts of the country and used much in the same way as marl. Markham held the opinion that sandy soil marled, limed, chalked, and manured would yield good crops of wheat or rye for three years, barley for one year, and oats for the following three years. After that it would grow excellent lupines for a season and then good meadow or pasture.³ Walter Blith, at a little later date, supported him. Lime could be applied at twelve to fourteen quarters an acre, or a mixture of lime, soil, and manure applied. From three to five crops could then be taken. The last crop must be well dunged and laid down to grass on the wheat or rye stubble. This dressing was only good for light and sandy lands, and should not be applied to cold wet gravel or hungry clay.⁴

This was no doubt a well established method by 1600. Norden is quite explicit and names the counties where it was the practice. "In *Shropshire, Denbighshire, Flintshire* and now lately in some parts of *Sussex* they fetch limestone, erect kilns, and burn it on their own farms. . . On the south-east coast from *Rye* to *Suffolk* they burn pebbles for the same purpose."⁵

The use of fertilizers other than dung, dung and soil mixed, or household waste and vegetable waste in a compost heap, was largely confined to places outside the open-field area. All round the coast calcareous sand and seashells and seaweed were collected. In the *Marcher* counties of the west midlands, and in *Sussex*, lime was burned. Along the coast calcareous pebbles were

¹ Gervase Markham, *Enrichment of the Weald of Kent*, 1625, *passim*; cf. Markham's *Farewell to Husbandry*, 1638.

² Googe, *op. cit.*, p. 19 v.

³ *Farewell to Husbandry*, 1638, p. 36.

⁴ Walter Blith, *The English Improver Improved*, 3rd ed., 1653, pp. 134, 135.

⁵ Norden, *op. cit.*, p. 227.

used in the same way by the end of the sixteenth century. Marl was used in bringing the forest land of the Weald and elsewhere into cultivation. It may perhaps be said that the most advanced systems of fertilization were practised away from the open fields, where farming was restricted by common regulation, although Robert Loder of Harwell, Berks, experimented with the use of malt dust and black ashes on his open-field farm there between 1610 and 1620.¹ Farmers working on the convertible system, now known as the ley husbandry, cultivated the land under more elastic conditions, and could therefore adopt new ideas with a certainty of reaping the advantage themselves. Knowing this, they were more ready to try novelties, and it was they who returned to the use of marl and lime most quickly—that is, if the use of these materials had ever been intermitted.

Orchards were part of many farms, but it was not thought possible to lay up sufficient manure to treat the whole area upon which fruit trees were grown. If a stubborn man was determined to do it all, then he must have a larger supply of dung. A trench was dug in the lower end of the orchard and filled with good, short, hot, and tender muck. Similar trenches were dug and filled all across the area, but few farmers could have enough dung to do all this. A better method was to dig circular pits and fill each with fat, pure, and mellow earth. In these pits the trees were planted.²

Hops were a comparatively new crop in England though cultivated in widely dispersed parts of the country, Yorkshire, Essex, Kent, and Cornwall for example. Rotten stall dung was considered the best dung for this crop. The hop grower was strongly advised to use none at all rather than new horse dung which was very pernicious. All the available dung must be kept until it was rotten before use.³ Dove dung from the pigeon cote was another good fertilizer for hops and ought to be carefully preserved.⁴ Some growers laid fern on the hills, and malt dust was used if the grower's farm was near a malting town.⁵

Besides being used for hops, pigeon's dung was valued for other purposes. It was a useful addition to other supplies of animal excreta, but supplies must always have been small. The largest dovecote can hardly have produced enough of this material to fertilize more than an acre or two. Its scarcity made it precious. Gabriel Plattes roundly declared that he had known a load of

¹ Robert Loder's *Farm Accounts*, 1610–1620, Camden Soc., 3rd Series, III, 1936, pp. 43, 59, 135, 136.

² William Lawson, *A New Orchard and Garden*, 1618, ed. Eleanor Sinclair Rohde, 1927, pp. 3, 4.

³ Leonard Mascall, *A booke of the Arte and Maner how to Plant and Graffe all sorts of Trees...* 1572; Reginald Scott, *A Perfite Platforme of a Hoppe Garden*, 1574, p. 33.

⁴ Tusser, *op. cit.*, p. 87.

⁵ Hugh Plat, *op. cit.*, pp. 48, 49.

pigeon dung fetched sixteen miles, and a load of coal given for it, a story that sounds too good to be true. He estimated that the effect on the land was worth double the charges.¹

Most farmers collected fertilizer and made compost heaps in order to enrich their arable land. Some small portion may have been saved for spreading on enclosed meadows or pasture, but there was little to spare for this purpose. Hay meadows were usually the low-lying land on the banks of some river, stream, or brook. Farmers would have been foolish indeed if they had not observed the richness of riparian grassland that was occasionally flooded when the rivers overflowed their banks. Towards the end of the sixteenth century some English farmers set out to regulate the floodings. They constructed water meadows, some of which are still used.²

The process was to cut channels across the land and stop the river or stream so that the water could be diverted. When it had filled the channels, stops in them caused it to flood the land. The flood water was retained for a suitable time until whatever solid material it carried was deposited and then it was drained off, the hatch in the river being opened so that the whole of the river waters resumed their ordinary course. Besides the good meadow that was improved by this means, marshy and boggy land adjacent to streams could be treated. The channels drained it and the aquatic grasses, rushes, and so on, gave place to a more nutritious herbage. Some few farmers used grass seed from the haymow to sow in these meadows, but it was not really necessary to seed down. The flooding induced the growth of grass most suited to the meadow, to the exclusion of other types.

Fitzherbert recommended the process if there was any stream that could be diverted to flood the meadows from after haysel until early May. The water must flow over the ground. It should not be allowed to lie stagnant. Of course it drowned the moles. If the stream came out of a town and was consequently polluted with sewage, and drained middens and dunghills, so much the better. From May onwards the water must be kept off the land.³ This is a clear anticipation of the process later elaborated, if it is not a description, of what Fitzherbert had seen in practice.

It is generally accepted, despite Fitzherbert, that the earliest water meadows in England were made in the Golden Vale of Hereford and in the

¹ Gabriel Plattes, *A Discovery of Infinite Treasure*, 1639, p. 26.

² See E. H. Carrier, *The Pastoral Heritage of Britain*, 1936: "such irrigated or water meadows are found on the hill slopes of East Yorkshire, in the Dove Valley in Derbyshire, and along the rivers Kennet, Churn, Severn, Avon, Itchen, and Test." Some of these may now be derelict.

³ *Surveying*, 1523, f. 42v. Cf. W. Folkingham, *Feudigraphia*, 1610, p. 33; Norden, *op. cit.*, pp. 199, 200, 205-6; Surflet, *op. cit.*, p. 670.

Wylye Valley in Wiltshire. They were constructed in the late sixteenth or early seventeenth century. Rowland Vaughan was the pioneer in Hereford; the name of the Wiltshire innovator is lost to us.¹ Norden had seen many water meadows in Somerset, Devon, and Cornwall when he wrote his book in 1607.² He regretted that the system was not generally used elsewhere, though it could be equally advantageous. The water is said to add fatness to the land.

Fatness was the essential principle of fertility. Vergil had extolled it. If a soil was naturally fat it was naturally fertile, if it was not then it must be made fat by the addition of manure. A naturally fat soil could be recognized by one or two simple tests or by its ecology. One method was to sprinkle a clod with water and rub it through the fingers. If it was clammy and stuck to the fingers like pitch, it was a fat fertile earth. Another method was to dig a furrow and fill it up again. If it then gaped and was open, the soil was lean and slender. If it reached out it was fat ground. What this precisely means is difficult to decide. If the natural ecology consisted of elm, sloe, bullace, or crab apple, the soil was fruitful, and where bulrushes, thistles, three-leaved grass, brambles, and blackthorn grew, corn could be grown.³

The relative value of the dung of the different species of livestock in crop nutrition was not precisely agreed upon by the different teachers, though so much of what they said was taken direct from classical sources. Hyll thought asses' dung was the best because it contained the least weed seeds. Other kinds should be used when not more than a year old. If kept long they lost some of their strength, an accurate observation. He disliked swine's dung. It was "most oyle." Ashes were good on the garden.⁴

Other people believed that pigeons' or poultry's dung was the richest in plant food. Next was human ordure, though that ought to be mixed with other rubbish of the house. Last was cattle droppings. This advice was that of Varro and Columella.⁵

Tudor and early Stuart scientists and those of much later days looked for one general principle that was the stimulant of plant growth. Much of their thinking was confused by the theories of the alchemists, and because their

¹ Rowland Vaughan. *His Boke published 1610*, ed. Ellen Beatrice Wood, 1897, *passim*. John Aubrey, *The Natural History of Wiltshire*, 1635, ed. J. Britton, 1847, p. 104.

² Norden, *op. cit.*, p. 198. The subject has been discussed in some detail by Eric Kerridge, 'The Floating of the Wiltshire Water Meadows', *Wiltshire Archaeological and Nat. Hist. Magazine*, LV, 1953, pp. 105-18.

³ Thomas Hyll, *A most high and pleasant Treatise teachyng how to garden . . .* 1563, ed. Violet and Hal Trowillion, 1946, p. 15; B. Googe, *Four Bookes of Husbandry*, 1577, p. 18.

⁴ *Ibid.*, p. 26; cf. Googe, *Four Bookes . . .*, p. 190.

⁵ Googe, *ibid.*; Surfleet, *op. cit.*, p. 671.

enquiries lacked direction. The farmers were quite unable to formulate the problems that confronted them, and could not describe to the scientists the nature of the questions that required answers. Even had they been able to do so the scientists' belief that there was only one principle to be considered, a miraculous salt that would do all things, would have clouded the issue. Bacon himself subscribed to this theory.

All excrements contained this vegetable salt and served to fatten and enrich the soil. It made all seeds flourish and grow. It was the result of the putrefaction of the hay and straw in the dung, and if the dunghill was left uncovered that valuable nutrient leached out. The fallow gathered saltiness from the clouds and rain. It was not common salt but vegetable salt. Few men understood that this was the true reason why dung was good in arable ground, said Sir Hugh Plat.¹

This salt was the nitre that then played so large a part in the chemist's laboratory. No mineral plant or animal could subsist without it. "The whole scientific world extolled in extravagant terms the virtues of a compound the true nature of which it had yet failed to grasp."²

Bacon set out many theories, some quite fantastic, others very near the mark. If vegetation were allowed to die into ground it would, he believed, fatten it, i.e. make it more fertile. He therefore suggested that peas' haulm should be ploughed in. It would, of course, increase the humus in the surface soil. Like others, he was aware that the plant nutrients would leach out of manure if exposed too long to the weather. He thought earth containing saltpetre the finest possible manure. It could be bred by covering in a piece of earth with a hovel or merely laying out some planks. Saltpetre was the same thing as nitre. Marl was high in the list of valuable manures because it contained so much fatness.

Bacon made many experiments to test his theories. He made a hot bed of old well-rotted horse dung and tested the germination of various seeds in it. The seed had previously been steeped all night in water mixed with cow dung. He made various other steepings with other kinds of dung, with ashes, salt, and wine. He watered strawberries with these diluents at intervals of three days, and found they came early.³

Only a few years later three gentlemen took out a patent for a process of steeping seed in rape oil, at the rate of a quart to a Winchester bushel, to promote germination. The soaked seed was treated with a powder consisting

¹ Sir Hugh Plat, *Diverse new sorts of soyle not yet brought into any public use for manuring* . . . 1594, pp. 11, 14, 15.

² Russell M. Garnier, *History of the English Landed Interest*, 1893, II, pp. 287, 288.

³ Francis Bacon, *Sylva Sylvarum, or a Natural History in Ten Centuries*, 1627, pp. 109-51.

of one quart of beans malted, one quart of powdered rape seed cake, and one quart of new lime fresh from the kiln, quenched with urine, and sifted as much as would cover the seed. The powder could also be used as manure on poor ground at about two bushels an acre. Alternative constituents were given in case these things were not available. The idea seems to have been based upon the recent spread of rape culture in many districts, but how widely it was ever adopted, if at all, is to seek.¹

Gabriel Plattes, at the end of the period, set out his theory that there was a double fatness in every compound body, one combustible, and one incombustible. The combustible fatness caused vegetation by its rarefying and vapouring quality when it felt the heat of the sun; the incombustible caused coagulation; of these two fatnesses all riches and treasures were engendered. This theory was stated as one version of the attempt to discover a 'principle' of vegetation that continued throughout the seventeenth and much of the eighteenth centuries. Plattes's fatness was similar to the *magma unguinosum* of Külbel. Plattes admitted that he knew very little, but felt that his glimmering light was better than none at all. The composition of the different kinds of dung varied according to the proportion of the incombustible astringent it contained. Experiment was necessary to determine what was best for the different soil types. Nothing would however increase unless the two fatnesses were mixed. He repeated the warning that the combustible fatness would grow soft, rarefy, and turn into vapour by the heat of the sun. On the practical side he followed the ancient ways, but made some suggestions for steeping seed and dusting it with powdered lime before sowing. He was convinced that the common way of husbandry led to nothing but poverty and barrenness.²

Farmers of this period, both high and low, had one main worry, manure. They could never neglect one source of supply however small, for every crop they grew depended upon the amount available. They were willing to undertake the labours of Hercules to build up a sufficient dunghill or compost heap.

Practical farmers were willing then, as now, to try novel ideas, though the majority were doubtless fond of the usual methods, and likely to stick to what was known to be safe. It is not too much to say that within the limits of the fertilizing material available practice was as effective as supplies would allow. The proof of this is that the national average yield of corn crops was steadily rising. It had been no more than from six to twelve bushels an acre on the best farms that Walter of Henley knew. The ordinary Elizabethan

¹ Anon, *A direction to the husbandman in a new cheepe and easy way of fertilizing and enriching arable ground*, 1634.

² Gabriel Plattes, *A Discovery of Infinite Treasure*, 1639, *passim*. Cf. Edward J. (now Sir John) Russell, *Soil Conditions and Plant Growth*, 3rd ed., 1917, pp. 1-4.

farmer would have been disappointed with less than sixteen bushels in a reasonably good year, and sometimes got much more.¹ This increment of yield had been obtained by following an intelligent empiricism. The time of theory supporting practice was not yet. Science was hampered by its nexus with alchemy, and its concern with the search for the philosopher's stone and other fantasies. Only when the didactic writers began to suggest that experiment should determine what was the best material to be used for a particular purpose did agricultural chemistry come to birth. The suggestions, rather fantastic, made by Sir Hugh Plat, Bacon, and Gabriel Plattes were the labour pains of modern bio-chemistry.

¹ *Walter of Henley's Husbandry*, ed. Lamond and Cunningham, 1890; *Robert Loder's Farm Accounts*, Table 10; Robert Trow-Smith, *English Husbandry*, 1951, pp. 105, 106.

Notes and Comments

THE BRITISH AGRICULTURAL HISTORY SOCIETY

The third Conference and Annual General Meeting of the Society was held at Somerville College, Oxford, from the evening of Thursday, 14, to the afternoon of Friday, 15 April. It was attended by about forty-four members of the Society. The Conference began on the Thursday evening with an illustrated lecture by Dr Arthur Raistrick, Reader in Economic Geology in the University of Durham, on his work on the Kilnsey Grange of Fountains Abbey. This was an open lecture and attracted a number of Oxford people who were not members of the Society. There were three papers on the Friday, the first by Dr Colin Cooke, Bursar of Magdalen College, who spoke on the college estates. The second was by Dr Rodney Hilton, of the School of History at Birmingham University, on Agrarian History in Medieval Warwickshire, and the third was by Dr Stella Davies on Cheshire Farming, 1750-1850.

The chair at the Annual General Meeting was taken by Mr Alexander Hay as the President, Sir James Scott Watson, was unfor-

tunately unable to be present. The retiring officers were re-elected, and Mr V. Bonham-Carter, Mr G. Houston, and Mr W. Harwood Long were elected to the Executive Committee in the place of Dr Joan Thirsk, Mr G. Ordish, and Mr Stuart Maxwell, who retired under Section 8 of the Constitution.

In presenting the report of the Executive Committee, the Chairman said that the Society had had an encouraging year. Membership had risen steadily and was still rising, and the Executive Committee had decided that it would in future be possible to publish two issues of the journal each year. Volume III Part II of the *Review* would therefore appear in the autumn. The Executive Committee had also decided that the time had come when the *Review* could be sold to non-members for the sum of twelve shillings and sixpence per copy. There would also in future be a Library Subscription of one guinea.

THE REVIEW

In accordance with the suggestion aired in our last issue, we publish in this second

(continued on page 113)

Mr Beresford and the Lost Villages: a Comment

By J. D. GOULD

MR BERESFORD's recent volume on the lost villages is an important achievement in agrarian historiography.¹ Its subject is one likely to appeal to a wide variety of reader, from erudite professional to the merest layman. The following comments are offered by one close to the latter end of that scale, for the present writer has no pretensions to more than a marginal acquaintance with Mr Beresford's subject. The criticism of one aspect of Mr Beresford's argument put forward in this paper is therefore submitted with the humility proper to a self-confessed amateur, and moreover it may be that the criticism—which is, however, a major one—has suggested itself to the present writer not so much as an objection to any view which Mr Beresford really holds but as a consequence of a form of presentation which entails the repetition of some points and the virtual omission of others. Even if this is so, however, it seems important that a work which will be read by many an enthusiast with something less than a complete grasp of the findings of modern research should be reliable in its implications as much as in what it explicitly states.

I

Mr Beresford argues that most of our lost villages died in the period 1450–1520. The mid-sixteenth century, which the opinion of contemporaries would have suggested to us as the years when the “black biting monster” was at its most voracious, and the reign of Elizabeth were by contrast times of relative quiescence. Within the period 1450–1520, again, the rate of mortality is said to have been higher in the first thirty-five years than in the remainder. The net cast by the investigation of 1517–8, therefore, which took cognizance only of cases of depopulation occurring after 1488, failed to catch the largest part of its potential haul. The cause of this depopulation is located without hesitation in the profits of sheep-farming. In the later fifteenth century, we learn, wool production became relatively more profitable than that of corn; in consequence, landowners converted land from arable to pasture, in the process enclosing the common fields, evicting their

¹ M. Beresford, *The Lost Villages of England*, Lutterworth Press, 1954. Subsequent page references in the text are to this work.

tillers, and not stopping short even of the destruction of whole villages.¹

Having given such an explanation of the rise of village mortality, it comes naturally to Mr Beresford to explain its subsequent decline in terms of the opposite situation. Cloth exports reached their highest point in the mid-sixteenth century, and in the reign of Elizabeth settled down to a level something like three-quarters of the peak figure. The growth of population, and particularly of towns dependent on the countryside for their food-supply, combined with this stabilization of demand for wool to cause a rise of corn prices compared with those of wool. "This must have been reflected in the fortunes and optimism of graziers. There was no longer that clear advantage in growing wool rather than corn. Indeed in some districts the movement began to be towards more ploughland" (p. 214). Mid-sixteenth century and Elizabethan pamphleteers and preachers continued to fulminate against depopulating enclosure. They did so in fear of a recurrence of a flood of village destruction which had already receded, but "perhaps only the increased profitability of corn in the second half of the sixteenth century prevented its second coming" (p. 146).

This seems all very well, but there is a snag. The careful reader will note that Mr Beresford does not actually tell him that less land was being enclosed and converted in the late Tudor and early Stuart periods, but he might well be forgiven if he inferred from Mr Beresford's presentation that this was the case. Later fifteenth century: wool profitable compared with corn, therefore much enclosure and conversion, therefore destruction of villages; these are the bare bones of Mr Beresford's argument. Later sixteenth century: corn profitable compared with wool . . . therefore much less destruction of villages. The second proposition seems to cry out for the interpolation of the middle term "therefore less enclosure and conversion." Nor does Mr Beresford help the unwary reader to avoid the trap by giving him any facts which would prove the interpolation incorrect. The reader learns, for example, that the findings of the 1607 Commission "deal with simple cases of enclosure on a small scale," and also reflect the enclosure of larger areas "by the assent of the proprietors and without the destruction of the village. This is the 'enclosure and depopulation' of 1607. It cannot rank with the huge enclosures and total depopulation of a century earlier" (p. 145).

¹ Mr Beresford's argument that grass became more profitable than corn in the later fifteenth century because of a rise in wool prices relative to those of corn, is not wholly convincing. It is not easy to accept his thesis that there was a very significant shift in demand for wool in the period, and Dr Bowden may be nearer the mark in suggesting that the special attractiveness of wool lay in lower costs of production at least as much as in relatively high selling prices.—P. J. Bowden, 'Movements in Wool Prices, 1490-1610', *Yorks. Bull. of Econ. and Soc. Res.*, IV, 1952, 109-24.

Our reader might after this be surprised to learn, and Mr Beresford does not tell him, that in the six counties investigated both in 1517-8 and 1607 the aggregate acreage shown as enclosed and converted was substantially greater in the second investigation than in the first.¹ Again, Dr Parker's thesis on Tudor enclosures in Leicestershire is drawn on for a case illustrating the point that even the larger enclosures of this later period generally brought only "hedged fields but not the empty village" (p. 145). Mr Beresford does not, however, draw the reader's attention to another finding of Dr Parker's researches, namely that the average annual rate of enclosure in Leicestershire in the period 1580-1607 was not far short of twice that in the period 1485-1520.²

Mr Beresford could of course retort that he was writing a history of deserted villages and not of the enclosure movement. There would be force in such a rejoinder, though one might still be justified in regretting that in a work which extends over 400 pages, and permits itself divagations in many directions, space could not have been found for a few sentences clearing up a side-issue as important as this. But one cannot entirely avoid the suspicion that Mr Beresford may have had another and less valid reason for not mentioning the continuance in the Midland shires of enclosure and conversion at a high rate. For had he quite explicitly stated the fact, he would then have had to account for two apparent difficulties. Why, in the first place, did the rate of village mortality decline while that of enclosure and conversion did not? And why, if the "balance of advantage," as he argues, tilted heavily towards corn from the late sixteenth century, did such enclosure and conversion continue to take place at all? Mr Beresford would

¹ E. F. Gay, 'The Midland Revolt and the Inquisitions of Depopulation of 1607', *Trans. Royal Hist. Soc.*, New Series, xviii, 1904, pp. 195-237; J. D. Gould, 'The Inquisition of Depopulation of 1607 in Lincolnshire', *Eng. Hist. Rev.*, lxvii, 1952, pp. 392-5.

² A comparison of acreages enclosed as reported by the official returns on the one hand, with the acreages worked out by Dr Parker from all types of evidence on the other, shows that for Leicestershire the 1517-8 commissioners reported 43 per cent of Dr Parker's total, and their 1607 successors 60 per cent. In both cases the lower totals of the commissioners were due less to the complete omission of villages where enclosure had taken place than to the underestimating of acreages in those places which were reported on. In considerable part, however, this 'underestimating' is only apparent, and reflects the fact that the commissioners were required to report only enclosures of arable for conversion, whereas Dr Parker's figures include a significant area already under pasture at the time of enclosure. Dr Parker records 11,100 acres enclosed in the first thirty-five years of the Tudor period, compared with nearly 15,000 in the shorter period 1580-1607. These figures are however subject to the qualification that Dr Parker had to omit a number of cases for which acreages could not be estimated.—L. A. Parker, *Enclosure in Leicestershire, 1485-1607*, London Ph.D. thesis, 1949, pp. 187-8.

have had little difficulty in solving the first of these problems, but there is no suggestion in his book that he knew the answer to the second, and if he did not, the consistency of his argument could only be maintained by tactfully avoiding any emphasis on the awkward fact that long after most of the lost villages had disappeared, the current of changing land-use over much of the Midlands continued to flow away from arable and towards pasture.

II

The answer to the first of our two problems is well enough known, and indeed is really given by Mr Beresford himself, albeit in a rather haphazard and incidental way. In the first place, there would be a natural tendency, as he several times points out, for the smaller places and the places where the tenurial structure was favourable to the would-be convertor to go first. As these riper villages disappeared, therefore, there would be an ever greater stimulus to proceed if possible by agreement, and if not, to enclose and convert something less than the whole area of a village.¹ Secondly, some weight must clearly be allowed to Tudor agrarian legislation and to the fact that Tudor prerogative courts and administration were more able and willing to give protection to tenants than their predecessors (p. 212 and chapter 4). Further, from the later sixteenth century a gradual change came over the enclosure movement in that the peasantry themselves took an increasing share in initiating the change of land-use—partly, no doubt, because for reasons already given the path of the big landowner was becoming more difficult, and partly because many smaller men had taken advantage of the opportunities offered by the conditions of the period to strengthen their economic position.²

III

Our second problem is more difficult. The paragraphs which follow suggest one possible solution, but a satisfactory answer will not be arrived at without further research which, if carried out with a clear understanding of the analytical problems involved, could make a contribution of major significance to our knowledge of economic growth in the early modern period.

We arrive at the core of the difficulty if we re-examine Mr Beresford's argument concerning regional variations in the rates of conversion and of village mortality. He explains these in terms of the suitability of different lands for different purposes. Land which was markedly more suited to corn would remain under the plough even when the "balance of advantage"

¹ Cf. W. G. Hoskins's remarks in 'The Deserted Villages of Leicestershire': *Essays in Leicestershire History*, Liverpool, 1950, pp. 106-7.

² Parker, *op. cit.*, pp. 190 ff.

was strongly in favour of grass. Land markedly more suited to grass, or with large areas of woodland, would be unable to spare greater acreages for pasture and would have achieved a balance between competing land-uses before the late fifteenth century. It was the marginal lands of the Inner Midlands, almost equally suited to corn and to grass, which responded most sensitively, so Mr Beresford tells us, to the increased margin of profit from pasture as demand for wool grew relatively to that for corn in the later fifteenth century.

Common sense is on the side of this theory. But if it were in itself an adequate explanation, why on these same lands—sensitive, as Mr Beresford himself recognizes they must have been, to swings of the “balance of advantage” in *either direction*—was there not a very substantial degree of reconversion to arable if, as we are told, the balance swung markedly back in favour of corn in the later sixteenth century?¹ Why, on the contrary, did the process of conversion to pasture continue, as the 1607 returns and other evidence agree in showing it to have done?

It may be that Mr Beresford has oversimplified the market situation. The market for wool was a very wide one; that is to say, the value of wool was sufficiently high in proportion to its weight for it to be economically worth while to carry wool for long distances by land. Therefore it is realistic to consider aggregate national demand for wool—and, for that matter, international demand too—as having some influence on land-use in every part of the country. The market for corn, however—and it is this which Mr Beresford overlooks—was more restricted, because, save in years of exceptional dearth, it was not profitable in sixteenth-century conditions to carry corn more than a relatively few miles *by land*. It could be, however, carried for long distances by water. The growth in London's demand for corn, therefore, which was certainly an important determinant of economic development in the late sixteenth century, did not act in so simple a way as might be imagined. The demand was of course partly met by imports, but so far as English corn served the need, it came from areas of good corn land relatively near the sea, or in the Upper Thames basin (whence it was transported down-current by river). In these areas, therefore, metropolitan demand exercised a significant influence; the level of corn prices was generally higher than the average for the country as a whole, and the differential of

¹ Mr Beresford is not unaware of this objection, but I find his reply to it—in terms of the difficulties of reconversion—unconvincing. Landowners who, when the profit motive had pulled towards grass, had braved the practical difficulties and unpopularity of the convertor, would surely not have been slow to reconvert with the whole weight of governmental policy and public opinion in their favour. In any case the reply does not explain the continuance of conversion to pasture.

profit in favour of the plough was maintained, as London grew, so as to keep the rate of conversion to a low level. In the Inner Midlands, however, the situation was different. The region was for the most part neither connected with London by water, nor near enough by land for metropolitan demand to exercise there a significant and regular influence. The area was, then, one of low corn prices,¹ and a small rise in the marginal rate of profit on pasture would exercise a maximum effect. When in February 1620 the Justices of the Peace for Leicestershire were invited to consider the provision of a storehouse for corn, they excused themselves on the ground that a storehouse was superfluous in their county, this being "remote from any means of exporting grain."² Towards the end of the Stuart period Andrew Yarranton, trying to persuade landowners that improvements of inland waterways were to their advantage, pointed out that the price of corn was low in Leicestershire, and in Warwickshire until the Avon was made navigable, these counties "having no Navigable River near to carry it away," and farmers being in consequence "lockt up in the Inlands."³ It was this remoteness which insulated most of the Inner Midlands from the growing corn demands of the capital, and allowed the region to continue as the classic area of enclosure for conversion even in the early Stuart period.

This picture is, of course, painted with a very broad brush indeed, and there were probably major regional variations even within the Midland area. For example, parts of Buckinghamshire (which returned a lower acreage of enclosure in 1607 than in 1517) came within the Upper Thames sector of the metropolitan grain market, as did much of Oxfordshire (which was not visited at all in 1607). Some parts of the South Midlands, notably of Bedfordshire, fattened cattle for the London market, and from an early date some of Bedfordshire's enclosures must have been for meat, not wool, production. As London grew, the meat demand of the capital probably influenced wider and wider areas; it was certainly to the satisfaction of that

¹ N. S. B. Gras, *The Evolution of the English Corn Market*, Harvard Economic Studies, XIII, 1926, p. 119. This evidence relates to the late seventeenth century, but there can be little doubt that price differentials as between regions would be similar a century earlier. Most of Rogers's prices for corn came from places more or less under the influence of London demand, and thus reflected the rise of metropolitan prices from the late sixteenth century onwards. Dr Bowden (*loc. cit.*) combined Rogers's corn prices with his own wool prices and thus naturally found relative prices moving decisively in favour of corn in the late Tudor and early Stuart periods. Mr Beresford, in turn, supported his explanation of the arrest of depopulation by Dr Bowden's tables, not realizing that as a measure of relative price movements as between wool and corn they might not be valid for areas unaffected by metropolitan demand for corn.

² *Cal. S. P. Dom.*, 1619-23, p. 124.

³ Quoted in T. S. Willan, *River Navigation in England*, O.U.P., 1936, p. 46.

demand that increasing areas of Leicestershire's rich pastures were devoted as the seventeenth century progressed.¹

IV

The above argument, if valid, would in part supplement and in part correct Mr Beresford's account of the chronology, causes, and geography of the conversion movement. It requires confirmation or refutation at many points, and it is for the local historian to undertake the research which will provide one or the other of these. More accurate knowledge of prices, particularly of regional variations in the prices of primary products, would carry us a long way. Detailed studies of crop and stock distributions, like those of Dr Hoskins for Leicestershire and Dr Thirsk for Lincolnshire, provide valuable clues, especially if we can have them for contrasted types of county and at different dates for the same county.² Our knowledge of local markets in the early modern period is conspicuous mainly by its absence. Until further research on these points, however, is forthcoming, the foregoing suggestions provide a perhaps plausible refinement to the argument, and smooth over some of the difficulties from which Mr Beresford's account does not seem entirely free.

¹ W. G. Hoskins, 'The Leicestershire Farmer in the Seventeenth Century', *Agricultural History*, xxv, 1951.

² For example, Dr Hoskins's work on Leicestershire inventories in the sixteenth and seventeenth centuries confirms that the county was virtually immune from the influence of London's demand—or any growing demand—for corn. There is no evidence of such influence in what the inventories reveal about land-use.

NOTES AND COMMENTS (*continued from page 106*)

part of Vol. III a list giving particulars of research in progress. Now that the Review is appearing twice yearly, it is hoped to make such lists a regular feature, alternating with the bibliographies of recent books and articles on agrarian history. The editor and compiler wish to thank all those members of the British Agricultural History Society and others who have assisted by supplying details of their own work; and they will be glad at any time to receive further information enabling the list to be amplified and brought up to date.

DR C. S. ORWIN

Members will have heard with regret of the death of Dr C. S. Orwin. Dr Orwin was the first director of the Oxford University Agricultural Economics Research Institute, a post which he held from 1913 until his retirement in 1946. It was in the field of agricultural economics that most of his work lay, but he also played an extremely important part in furthering the study of agricultural history. Since the formation of the Society his health prevented him from attending any of the

(*continued on page 118*)

The Cattle Trade of Aberdeenshire in the Nineteenth Century

By J. H. SMITH

BEFORE the introduction of sea and rail transport only store animals surplus to local requirements were exported from Aberdeenshire and the north-east. They were driven south, many of them to be fattened in Norfolk for the London market. The journey was costly in time since the rate of travel rarely exceeded sixteen miles per day, and considerable loss in condition occurred even with the hardy type of beasts bred in the northern half of Scotland. Animals often suffered injuries or were stolen, and there was the added risk that drovers might abscond with the money realized by the animals when sold.

Farmers, and especially small farmers, were highly dependent upon dealers and drovers, and on occasions when the scarcity of fodder coincided with a severe winter they often had to sell at prices dictated by buyers.

Steam transport opened up new markets and in particular made the London fat stock market available to farmers in Aberdeenshire; it "opened Smithfield market and its prices to Aberdeenshire as well as to Norfolk. The drover's occupation was gone. It was no longer the raw material that left for the south but the finished article of commerce, carrying as is well known the highest price in the metropolis."¹

SEA AND RAIL TRANSPORT

Transport of cattle by boat from Aberdeen to London commenced in 1828. At first shipments were small, for there was a lack of ships fitted for this trade, and farmers dreaded losses at sea. The following summary shows the progress made during the twenty years prior to the opening of the Aberdeen Railway in 1850.

1828-32 Yearly shipments increased from 150 to 800.

1833-6 Yearly shipments increased from 1,250 to 8,049.

1836-41 Yearly shipments varied between 5,843 and 8,049.

1842-9 Except for one year the yearly shipments increased from 9,543 to 15,858.

After 1850 sea transport of cattle declined to about one-third of its previous size, but many farmers continued to use the sea route until well into the present century.

Sea transport suffered from a number of disadvantages and limitations. Storms at sea caused delays and losses. William McCombie, a foremost breeder of Aberdeenshire cattle in the nineteenth century, noted: "I have known them [the ships] a month at sea. I have seen the same cargo of cattle driven back to Aberdeen two or three times. Although the loss by deterioration of condition must have been great, it was astonishing how few deaths occurred in sailing vessels; the proportion was greater in steamers. A year seldom passes without the shippers having heavy losses. I was owner of part of the cattle when every beast aboard the *Duke of Wellington*, except three, was either thrown overboard or smothered in the hold."²

The sea route limited Aberdeenshire farmers to markets served by east coast ports, and although London was a large and growing market, butchers knew that farmers in the north-east had few other fat stock markets open to them.

In 1850, when the Aberdeen Railway was opened, 12,000 cattle were carried by rail to

¹ A. Harvey, *Agricultural Statistics of Aberdeenshire*. British Association, Aberdeen Meeting, 1859.

² W. McCombie, *Cattle and Cattle Breeders*.

Edinburgh, Glasgow, and London, and over the twenty years from 1850 to 1870 (years for which railway statistics on the movement of cattle from Aberdeen are available) the equivalent of between 27,000 and 44,000 cattle passed through Aberdeen each year on their way by rail to markets in the south. The yearly numbers varied more commonly between 34,000 and 44,000, and nearly 90 per cent of the trade was with London. As railway communications extended north and westwards from Aberdeen an increasing number of farmers changed over to the production of fat cattle. Each proposal for an extension of the railway system was studied with care, and when alternative routes were proposed for the same area the case for and against each was fought in the local press and on Parliamentary Committees. Naturally, every farmer, while reluctant to have his own farm severed by railway embankments and cuttings, was anxious that the railway should pass within easy reach of his steading.¹

The advantages of railways to cattle rearers and feeders are seen in the following extract, which compares conditions before and after the introduction of railways. A writer to the *Aberdeen Free Press* in 1860 noted: "Those who have a distinct recollection of the last twenty years will remember that when there was a season of scarcity of food for cattle coupled with a severe winter, the price of cattle generally went down 30 to 50 per cent. There was not only the necessity of selling off the extra stock to save the keep, which the buyers were but too well aware of, but the drove roads being blocked with snow, presented serious difficulty in removing the cattle after they were sold." He then dealt with the conditions during the winter of 1859-60. "For the last five months the farming interest has had to contend with all the difficulties of scarcity of feed and a severe winter, and how has he come out of them? Why, he could sell every fortnight through the winter to willing buyers at a good price, if he was inclined to do so, or if he would keep

them on he had oil-cake in unlimited quantity within three or four miles of his door along the line of the railway."²

One important advantage to farmers following the introduction of rail transport was the reduction in freightage rates. Steamship owners had previously been charging up to £3 per head for taking cattle to London, but after 1850 the rates were steadily reduced until in 1865 the journey by sea cost only 21s. and that by rail about 25s. per beast.

Only small quantities of meat, mainly salted pork, were dispatched by sea before 1850, but by 1855 butchers in Aberdeen had developed a substantial trade in beef carcasses and in that year 8,000 tons of beef—the equivalent of 28,000 carcasses—went by rail to London. This trade in meat reached a peak of just over 10,000 tons—about 35,000 carcasses—in 1865.

CHANGES IN OUTPUT

It is difficult to make any precise assessment of the increase in production of cattle in Aberdeenshire during the nineteenth century, largely because of changes in the character of the trade, the increased dependence upon imported store cattle, and the growth in the number of cattle produced outside the county which passed through Aberdeen on the way to markets in the south. At the beginning of the century the yearly output was about 22,000 cattle, of which 12,000 left the county as lean beasts to be fattened in England. In 1870, the last year for which estimates are available,³ 11,224 fat cattle and 8,040 tons of meat—rather more than 28,100 carcasses—left Aberdeen. In addition just over 26,000 beasts were slaughtered for consumption in the county. About one-half of this total of just over 65,300 cattle were bred and reared in the county, perhaps rather more than one-quarter were imported stores fattened in the county, and the remainder came into Aberdeen as fat beasts from other north-eastern counties. Bearing in mind all the circumstances, the production of beef within the

¹ *Aberdeen Free Press*, 2 May 1856.

² *Aberdeen Free Press*, 30 March 1860.

³ *Aberdeen Free Press*, 15 September 1871.

county, as distinct from the sale of fat cattle, doubled during the years 1800 to 1870. Expansion after 1870 was relatively small compared with the growth during the first sixty years of the century.

DEPENDENCE UPON IMPORTS

The expansion in the cattle trade was made possible by the imports of store cattle. Farmers in Orkney and Zetland began to export cattle to Aberdeen in 1868, and between that date and the end of the century they sent between 6,000 and 9,000 beasts each year. It is not known how many of these were fat and ready for slaughter on arrival at Aberdeen, but perhaps most of them came to the mainland for fattening.

Ireland sent large numbers of store cattle to Britain each year, and many came to Aberdeenshire. Unfortunately there are no figures showing the extent of the county's dependence upon stores from this source.

Canada had been sending live cattle to Britain for several years before 1890, when exporters began shipping animals direct to Aberdeen. Supplies from this source came to an end in 1893 when an embargo was placed upon imported store cattle¹ in an attempt to rid the country of pleuro-pneumonia and other contagious diseases of cattle. During the three years 1890 to 1892, however, nearly 39,000 Canadian cattle came to Aberdeen. Some of these may have been slaughtered on arrival, but most of them went to farms in the north-east to be fattened. In these three years the imports from Orkney and Zetland and from Canada averaged 20,000 per year and when to this is added supplies from Ireland it will be seen that the dependence upon imported store cattle was appreciable.

This dependence was so important that many farmers became greatly alarmed when the government imposed its embargo. They maintained that Canadian store cattle were particularly suited to their system of stall feeding. Breeders and rearers naturally

favoured the embargo because they hoped it would eradicate cattle diseases and also increase the profitability of their farming enterprises. Low prices had caused store raising to be unprofitable, and this was said by some to be a good reason why store raisers should turn to cattle fattening and obtain their lean animals from outside the county.² Opponents of the embargo maintained that the restriction had benefited the Irish and not Scottish farmers. When supplies from Canada were terminated, many farmers turned to Ireland for their store beasts because the small Aberdeen type of cattle did not suit their requirements.

BREEDS OF CATTLE

By the 1880's farmers in Aberdeenshire had established three distinct types of cattle enterprises. In the remote areas store cattle were produced and sold to the lowlanders for fattening. Some farmers in the lowlands bred and fattened either Aberdeen cattle, short-horns, or crosses of these two breeds. Others either concentrated on fattening the larger type of imported store beast or fattened native-bred animals. Fatteners produced cattle for markets, catering for the varying needs of large and small families and with widely differing incomes. This tendency towards specialization was a distinct outcome of improved transport and demonstrates how farmers adapted their businesses to the needs of a wider and more variable market.

At the beginning of the century farmers produced cattle able to live hard on the meagre supplies of food from poor and exhausted soil; cattle which could withstand the rigours of the long journey by road to fattening farms in England. But after 1828 they rapidly turned their attention to fattening cattle for the London market. They soon became convinced of the importance of breeding and feeding for early maturity, and found it was more economical to "feed the

¹ The embargo did not apply to Ireland.

² Royal Commission on Agriculture: *Report of Assistant Commissioner for the counties of Perth, Fife, Forfar, and Aberdeen*, 1894. C.7342.

young cattle properly from the commencement and not *keep them alive* until three years old, and *then feed them*."¹ Early maturity meant lower costs of production, and "in the place of pure bred animals of the slow feeding Scotch breeds, beasts crossed with the shorthorn are brought to market one or two years earlier, and of greater bulk than could formerly be accomplished. Now, though the proportion of fat to lean meat may be somewhat greater than in the older pure Scots, it will be found that the consumable meat is also greater."²

The shorthorn had size and a more favourable rate of growth, but the quality of its flesh was inferior to that of the Aberdeen breed. It was claimed by some that the Aberdeen shorthorn cross-bred beast combined the best qualities of each of the parent stocks. One Aberdeenshire contributor to the Second Statistical Account noted, "The bullocks of this cross attain a greater weight in three years with good keep than the pure Aberdeenshire in four; and, from the facility with which they can be conveyed by steam, without loss of weight, to London markets, they yield a much greater remunerative price to the feeder."³ It was generally admitted, however, that the cross-bred animal was inferior to the pure native stock, but "as no preference seems to be given to the pure Aberdeenshire breed in the London market, an inferiority in the article exposed to him, so long as that inferiority does not affect its exchangeable value, cannot be supposed to have much influence with the Scottish farmer."⁴

Breeders feared that Aberdeen cattle would decline in numbers and "that the good name of Aberdeenshire will be lost in the London markets."⁵ The changed circumstances produced a conflict of interest between breeders and fatteners. The former, regretting the growing tendency of fatteners to buy the larger type of lean animal bred out-

side the county, failed to appreciate that the demand for high-priced top-quality joints from Aberdeen cattle was limited and that any substantial extension of demand for fresh meat was dependent on the production of larger and cheaper joints. The larger store cattle could be fattened cheaply and sold at prices attractive to butchers supplying the needs of lower middle and working-class people with large families.

Published information on the relative importance of breeds is limited to data collected under the Markets and Fairs (Weighing of Cattle) Act, 1891. Under this Act provision was made at the larger markets for weighing and grading cattle. Use of the facilities was voluntary, but at Aberdeen the proportion of all cattle entering the market which were weighed and graded increased from just under 30 per cent in 1893 to well over 40 per cent at the end of the century. The reports relating to the operation of the Act during the two years 1894 and 1895 showed that the native breed accounted for less than six, and cross-bred beasts for more than 86 per cent, of all cattle presented for weighing at Aberdeen market. These figures understate the importance of Aberdeen cattle, and it seems likely that weighing and grading found greater favour with the feeders of cross-bred beasts than with the owners of the smaller native stock. The former liked to advertise size while the latter preferred to direct buyers' attention to conformation, the more favourable relationship between live- and dead-weights, and quality.

Aberdeen cattle presented for grading at Aberdeen market in the two years 1894 and 1895 were of slightly lower quality than the cross-bred beasts; this is contrary to the known differences in quality of the two classes and supports the view that the better class Aberdeen cattle were sold without being weighed and graded.

¹ 'A Word for the Native Breed of Cattle', *Aberdeen Journal*, 25 January 1854.

² *Aberdeen Journal*, 19 September 1860.

³ Rev. Thomas Burnet, Parish of Daviot, Aberdeenshire. Second Statistical Account.

⁴ Rev. Robert Robertson, Parish of Ellon, Aberdeenshire. Second Statistical Account.

⁵ *Aberdeen Free Press*, 6 June 1862.

PRICES

During the first half of the century, when the cattle industry of the county was largely independent of outside supplies of store animals, there were few complaints about prices. Steam transport had proved such a boon that farmers' main concern was to expand the production of fat cattle. When, however, large numbers of farmers turned away from rearing and concentrated on fattening purchased store beasts, there were frequent complaints, mainly from feeders who suffered from adverse short seasonal fluctuations. Between 1850 and 1867 prices of fat cattle rose steadily; by the latter year they had increased by 50 per cent, and in the absence of short period fluctuations the improvement favoured both breeders and feeders.

Between 1869 and 1884 prices remained high, but short period fluctuation often caused feeders to suffer losses or at best to earn only small profits. During the winter of 1871-2 some farmers complained that the prices realized by fat cattle were 15s. per cwt below those previously paid for the same beasts as lean stores. Feeders felt fairly confident of being able to plan for normal long-

term trends; it was the unpredictable short period fluctuations which made cattle fattening a risky undertaking.

The steady decline in prices which began after 1884 caused greater difficulties for breeders than for feeders, since it was not so easy for the former to make adjustments in their cattle enterprises to meet falling prices. On many of the breeding and rearing farms the major items of farm expenses were fixed, and occupiers often felt themselves to be at the mercy of the feeders, who were able to pass back to producers of store cattle almost all the expected reductions in prices and stabilize their own 'feeders' margin'. Prices of animal feeding stuffs declined rather more sharply than those of fat cattle and since feeders were more dependent than rearers on purchased foods, the general movement in prices was more favourable to them.

Throughout the century, however, cattle rearing and fattening was, financially, more satisfactory than the production of grain crops for sale. And those farmers in Aberdeenshire who concentrated on the production of pedigree or of top-quality fat cattle had little cause for worry even in years when prices were generally low.

NOTES AND COMMENTS (*continued from page 113*)

meetings, but he took a keen interest in both the work of the Society and this *Review*. His first historical publication was *A History of Wye Church and Wye College* in 1913. There followed in 1928, perhaps his most important work, *The Reclamation of Exmoor Forest*. Together with his wife he wrote *The Open Fields*, which was first published in 1938. His last book, *A History of English Farming*, came out in 1949.

SURVEY OF ENGLISH FOLKLORE

Plans have recently been announced for a survey of English Folklore which is to be made by the English Department of University College, London, under the guidance of Pro-

fessor A. H. Smith with the assistance of Mr J. McN. Dodgson. The survey will aim at the study of the traditional elements in the life and customs of England and will include such topics as folk-tales, anecdotes, beliefs and superstitions, customs, traditional plays, games, pastimes, and so on. Information about the traditional material culture will be recorded, but primarily as a background against which folklore may be properly examined.

Members of the Society who feel they may be able to help in this important work are asked to get in touch with Mr J. McN. Dodgson at the Department of English, University College, Gower Street, London W.C.1.

Work in Progress

Compiled by JOAN THIRSK

The following list does not lay claim to completeness. It has been compiled from the particulars given in response to the appeal in the last issue of this Review. It is hoped to publish similar lists from time to time, and the compiler will therefore be glad to receive any information concerning changes of subject and omissions from this list.

ADAMS, R. H., *The Poplars, Midford Road, Bath, Somerset.*

Bibliography of land drainage, irrigation, reclamation of marsh, fen, and tidal lands, and warping in Great Britain and Ireland.

AGERSKOW, MARGARET, B.A., *Department of Geography, Leeds University.*

The reclamation of Knaresborough Forest (Leeds M.A. thesis).

BARRETT, JOHN, M.A., LL.B., *Clarence Lodge, Hampton Court, Surrey.*

Food and its adulteration in the nineteenth century (London Ph.D. thesis).

BATLEY, Mrs L., *Department of Latin, Sheffield University.*

Eighteenth-century manorial history of Sheffield, Rotherham, and district.

BEARINGTON, F., 39 *Snow Hill, Maulden, Bedford.*

A general study of market gardening in eastern and central Bedfordshire.

BLANCE, THELMA, *Department of Geography, Aberdeen University.*

Agriculture in the Blair Athol district.

CHAMBERS, J. D., Ph.D., *Sub-department of Economic History, Nottingham University.*

Agriculture and population changes in the Midlands.

CLOUGH, Miss M., *Girton College, Cambridge.*

The Pelham estates before 1460, with special reference to the manor of Laughton, Sussex (Cambridge Ph.D. thesis).

DAVIES, Mrs C. S., Ph.D., *Durness, Robin Lane, Sutton, Macclesfield, Cheshire.*

The agricultural history of Cheshire, 1750-1850.

DAWSON, E., *Department of Agriculture (Agricultural Economics Section), Leeds University.*

The Yorkshire wolds: the pre-enclosure farming system and its transformation into the four-course system.

DODD, J. PHILLIP, M.Sc.Econ., F.R.G.S., *Hampton Loade, Alveley, Bridgnorth, Salop.*

Agriculture of the West Midlands in the nineteenth century.

Agriculture during the Napoleonic Wars in Yorkshire, Lancashire, and the Midlands.

Shropshire agriculture in the nineteenth century.

DURY, G., *Department of Geography, Birkbeck College, London.*

Agriculture and land use in the Channel Islands in the late eighteenth century.

EMERY, FRANK, *Department of Geography, University College of Swansea.*

Agrarian change in Gower (S. Wales), 1500 onwards.

'Georgical' work in England, 1650-1750.

EVANS, Professor E. ESTYN, *Department of Geography, The Queen's University, Belfast.*

The import of improved agricultural implements and techniques from England to Ireland.

EYRE, S. R., B.Sc., Ph.D., *Department of Geography, Leeds University.*

The limits of improved land and common pasture in N. Derbyshire from medieval times.

- FINBERG, H. P. R., M.A., *Department of English Local History, University College, Leicester.*
The farming accounts of the Izod family of Westington, Glos.
- FLETCHER, T. W., *Agricultural Economics Department, Manchester University.*
The development of Lancashire agriculture.
- FORSTER, GORDON C. F., *Department of Economics, Sheffield University.*
The progress of enclosure in Yorkshire, 1500-1850.
- FOX, Mrs H. M., 13 *Park Road, Beckenham, Kent.*
Anglo-Saxon agriculture (Cambridge Ph.D. thesis).
- FUSSELL, G. E., F.R.Hist.S., 55 *York Road, Sudbury, Suffolk.*
Influence of the Low Countries on English farming.
The English Dairy-farmer, 1500-1900.
- GOLSON, J., *Peterhouse, Cambridge.*
Aspects of the medieval settlement of Lincolnshire (Cambridge Ph.D. thesis).
- GRANT, B. F., 78 *Twynford Avenue, London, W.3.*
History of Wensleydale, Yorkshire.
- HALLAM, H. E., M.A., *Holyrood House, Churchgate, Spalding, Lincs.*
The medieval fenland.
- HALLAM, Mrs S. J., M.A., *Holyrood House, Churchgate, Spalding, Lincs.*
The Romano-British fenland.
- HARRIS, A., *Department of Geography, Hull University.*
Agricultural history (with particular reference to changes in land use) of the East Riding of Yorkshire, 1550-1850.
A comparative study of the Vale of Pickering and the North Yorkshire moors.
- HARRISON, WINIFRED, *Department of History, Bedford College, London.*
Sir John Sinclair and the Board of Agriculture (London M.A. thesis).
- HENDERSON, H. C. K., Ph.D., *Department of Geography, Birkbeck College, London.*
The 1801 crop returns.
- HIGGS, JOHN W. Y., *Museum of English Rural Life, 7 Shinfield Road, Reading, Berks.*
Farm implements and equipment.
- HILTON, RODNEY H., D.Phil., *School of History, Birmingham University.*
English agrarian development in the fifteenth century.
- HINDLEY, D. J. B., *University College of the South-West, Exeter.*
The economy and administration of the estates of Exeter Cathedral in the fifteenth century (M.A. thesis).
- HOSKINS, W. G., M.A., Ph.D., *All Souls College, Oxford.*
The Midland peasant.
- HUNT, H. G., B.Sc.Econ., 108 *Perry Rise, Forest Hill, London, S.E.23.*
Parliamentary Enclosure of Leicestershire (London Ph.D. thesis).
- HUNT, T. J., *Orchard End, Pyrland, Taunton, Somerset.*
History of the manor of Taunton in the thirteenth century, chiefly from the Pipe Rolls of the Bishopric of Winchester.
- JENKINS, J. G., *Museum of English Rural Life, 7 Shinfield Road, Reading.*
Evolution and regional characteristics of the four-wheeled wagon.
- JOHN, A. H., B.Sc.Econ., Ph.D., *London School of Economics and Political Science, Houghton Street, Aldwych, London, W.C.2.*
The prices of animal products in England, 1700-1850.

- JONES, GLANVILLE, R. J., M.A., *Department of Geography, Leeds University*.
Land settlement, tenure, and utilization in the Conway-Clwyd district of North Wales. A study of the transition from feudo-tribal to modern forms of land tenure (Leeds Ph.D. thesis).
The agrarian history of North-West Yorkshire.
- KENYON, G. H., *Iron Pear Tree Farm, Kirdford, near Billingshurst, Sussex*.
Farming from c.1600 on the Weald Clay of Sussex.
- KERRIDGE, ERIC, *Department of Economics, Liverpool University*.
English agrarian history in the sixteenth and seventeenth centuries.
- LONG, W. HARWOOD, M.A., *Department of Agriculture, Leeds University*.
Yorkshire farming in the sixteenth and seventeenth centuries.
- MACPHERSON, ARCHIBALD, *Department of Geography, Aberdeen University*.
Afforestation and agriculture in the Dee valley.
- MCCORD, NORMAN, *Trinity College, Cambridge*.
History of the Anti-Corn Law League, 1838-47 (Cambridge Ph.D. thesis).
- MCGREGOR, O. R., *Department of Social Studies, Bedford College, London*.
History of modern British agriculture and rural society, 1800 to the present day.
English land tenure and agricultural progress, 1832-83.
Finance of land drainage in the nineteenth century.
- METCALFE, BRIAN, B.A., *Department of Geography, Leeds University*.
Geographical aspects of the reclamation and development of Hatfield Chase (Leeds M.A. thesis).
- MILLER, Professor A. AUSTIN and WOOD, P., *Department of Geography, Reading University*.
The mapping of strip lynchets.
- MILLS, DENNIS R., *Department of Geography, Nottingham University*.
Land use and agricultural changes in Kesteven in the eighteenth and nineteenth centuries.
- MINCHINTON, W. E., B.Sc.Econ., *Department of History, University College of Swansea*.
The 1795 and 1800 crop returns for Wales.
The 1797 livestock returns for Dorset.
- MOORE, D. C., *Trinity College, Cambridge*.
The position of the English farmer in its economic, social, and political aspects, c. 1850-75.
- NEWLYN, ANNE C., B.A., *Department of Agricultural Economics, Reading University*.
History of farming in Kent in the seventeenth century.
- OSCHINSKY, DOROTHEA, Ph.D., *Department of History, Liverpool University*.
The didactic literature on estate management and farming in the Middle Ages.
- PAWSON, Professor H. C., M.B.E., M.Sc., F.R.S.E., *University School of Agriculture, The Quadrangle, King's College, Newcastle-upon-Tyne*.
The life and work of Robert Bakewell of Dishley, 1726-95.
- PELHAM, R. A., *The Court House, West Meon, Hants*.
Agricultural geography of the fourteenth and eighteenth centuries.
- POSTAN, Professor M. M., *Peterhouse, Cambridge*.
The agrarian economy in the Middle Ages.
- RAEBURN, JOHN R., B.Sc., M.S., Ph.D., M.A., *London School of Economics*.
Responses of British agriculture to price and cost changes since 1870.
- REID, F. L., *St Catherine's Society, Oxford*.
A study of the economy of the English agricultural estate in the nineteenth century.

RHYS-RANKIN, Capt. Sir HUGH, F.S.A.(Scot), M.R.I., *Green Lane, Bryngwyn, via Kington, Herefordshire.*

Welsh cattle droving during the turnpike era from west and central Wales to England.

SHEPPARD, JUNE, M.A., *Department of Geography, Queen Mary College, London.*

Historico-geographical study of the draining of the marshlands of East Yorkshire.

SHORTER, A. H., *Department of Geography, University College of the South-West, Exeter.*
Field patterns in England.

THIRSK, JOAN, B.A., Ph.D., *Department of English Local History, University College, Leicester.*
Lincolnshire agrarian history, 1540-1914.

WALKER, Miss F. R., *Agricultural Economics Department, Manchester University.*
Home produced and imported supplies of food since 1820.

WATTS, D. G., *Department of English Local History, University College, Leicester.*
Agrarian life on the estates of Titchfield Abbey, Hants.

WILLIAMS, Professor DAVID, *University College of Wales, Aberystwyth.*
The Rebecca riots. A study in agrarian discontent.

Letter to the Editor

SIR,—Through an almost fortuitous event, in recent years I became possessed of twenty-five original, lengthy letters written by that great pioneer of livestock breeding in the eighteenth century, Robert Bakewell of Leicestershire, to his one-time pupil, George Culley of Northumberland. These are quite lengthy letters and throw considerable light upon the character and aims of Bakewell and the difficulties he encountered. They are now in the possession of King's College.

For very many years I have been greatly interested in the improvement in livestock breeding accomplished by Bakewell, and the discovery of these letters with certain other papers of the same period confirmed my desire to write a full account of his life and work. Professor Cooper has kindly undertaken to contribute a chapter in the proposed publication on the impact of Bakewell's work on our stockbreeding methods.

I have accumulated a number of references to earlier essays and memoirs on Bakewell's life, and other observations on his activities. No biography exists or original papers left by Bakewell, to my knowledge, other than the letters referred to above and six much shorter letters preserved in the British Museum. A copy (I think I possess the original) of the financial appeal he made is in the Rothamsted library.

I should greatly appreciate the help of my fellow members of the Society who could inform me of any documents or photographs relating to Bakewell's life and work, and the availability of such.

Yours, etc.

H. C. PAWSON

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Newcastle-upon-Tyne, 1.*

Book Reviews

FRANSIS PAYNE, *Yr Aradr Gymreig*. University of Wales Press, 1954. 206 pp. with 24 plates and 17 line drawings. 12s. 6d.

Mr Payne's book is the first important study of the plough in Britain since the publication of J. B. Passmore's *The English Plough* in 1930. It is a comprehensive study of great merit, for the author not only describes the development of the plough in Wales from prehistoric times to the end of the nineteenth century, but he also throws new light on the development of Welsh society. He clarifies some of the controversies that have raged for years among writers on agricultural history, and although one may not always agree with his theories, they are nevertheless supported by weighty arguments.

In the first chapter Mr Payne describes the ploughs of prehistoric Europe. Although the evidence from Wales is negligible, the author supposes that the continental types were used by primitive Welsh agriculturists. Many writers have described the ploughs of the Bronze Age as poor implements designed to scratch the surface of the soil. The narrowness of the share explains in part why the Celtic fields were square and small, while the fact that these light ploughs were drawn by two oxen contributed further to the shape of the fields. Mr Payne disagrees with this, and suggests that the dry nature of the climate made it necessary to plough and replough the land at frequent intervals. The best way to do this, he says, was by cross ploughing. The Celtic fields were therefore the result of an agricultural technique, and were not brought into existence either by a deficiency in plough design or by a deficiency in the draught power of the oxen. In the same way the author regards the change of climate in the Late Bronze Age as a turning-point in agricultural practice. Something more substantial than the light plough which scratched the surface of a dry land was now required, and so the heavy mouldboard plough was developed to deal with the new environmental

conditions. With the appearance of this heavier implement the Celtic fields were replaced by the elongated Belgic fields. In some ways this first chapter is the most enlightening in the whole book, for although the author has little direct evidence on which to draw, he throws a new light on old controversies, and propounds a number of plausible theories on the character of prehistoric agriculture.

Though evidence on plough design in prehistory is scanty, it is scantier still in the Dark Ages, which is the subject of the second chapter. At the beginning of the chapter Mr Payne makes it clear that neither the Romans nor the Anglo-Saxons influenced the methods or the implements of agriculture in Wales. Archaeological evidence is almost completely absent, and although the songs of Aneirin and Llywarch Hên throw some light on the agriculture of the period, the picture that emerges is by no means a clear one.

In the laws of Hywel Dda, the various parts of the plough are named, and although on the face of it the laws might be expected to provide vital information on plough design in the tenth century, the fact that the earliest copies of the laws are several centuries later, means that they do not provide contemporary information. The basis of this chapter is of course literary, but Mr Payne confesses that pathetically little is known about the ploughs of early medieval Wales. There is no conclusive evidence, he says, that the medieval plough was a heavy two-handled, two-wheeled implement; indeed he believes that both a wheeled and a swing plough were common in north-western Europe at the time.

Many fourteenth- and fifteenth-century bards described in detail the ploughs of their own districts, and Mr Payne uses for instance the descriptions of Lewis Glyn Cothi and Iolo Gôch. From such sources he provides a clear picture of the later medieval plough and its regional variations.

From the early eighteenth century to the end of the nineteenth century Mr Payne is on much surer ground, and speculation is far less necessary. There is a profusion of documentary evidence, in addition to actual ploughs that have been preserved. He describes in detail many varieties of plough made by local ploughwrights, and gives a very clear picture of the regional variations that existed. This is well supported by photographs and diagrams.

A final chapter is devoted to draught animals and harness, and here Mr Payne gives an interesting picture of the development of oxen and horses as plough beasts. The evidence ranges from the rock engravings of Liguria to the nineteenth century, and there is a special section of the chapter on mixed teams.

The book is well illustrated with photographs and drawings, and the author is to be congratulated on a significant contribution to our knowledge of the plough. The only serious criticism to be levelled at it is that it is written in a language that will be understood by less than a dozen members of the British Agricultural History Society and which is only spoken by three-quarters of a million people. There is certainly a case for the production of more books in the Welsh language, but it is seriously open to question whether such a medium is suitable for a scholarly work of this kind. Mr Payne's book is a study of international importance, and deserves a wider market than that provided by his and my fellow-countrymen. It is to be hoped that he will lose no time in preparing an edition or at least a summary in a language more widely understood.

J. GERAINT JENKINS

NIGEL HARVEY, *The Farming Kingdom*.

Turnstile Press, 1955. 178 pp. 15s.

Mr Harvey's book is an analysis of the "tools" of modern British farming, with a preliminary section contributing the perspective of history to the current agrarian scene and making the whole a survey in four dimensions. In it he describes the development and

modern uses of livestock, crops, fertilizers, machinery, and implements.

The historical prelude, which occupies 74 out of the 171 pages of text, is by far the less satisfactory of the two parts of the book. The author takes us on a saunter through the centuries hand in hand with those convenient but treacherous companions, Personification and Generalization. Peering first into the medieval thickets, he expounds the gospel according to St Ernle; and nearly every page cries aloud for qualification. When he emerges into the open, well-trodden country of the eighteenth and nineteenth centuries, however, he becomes a shrewder and more skilful guide, and enlivens his narrative with short détours along such less frequented paths as the improvement of grasses and the search for new fertilizers and feeding stuffs.

Arrived in the twentieth century, Mr Harvey reveals himself to be—as indeed he has long shown himself in his *New Statesman* articles on rural themes—a brilliant expounder of the contemporary agricultural scene. He marshals his facts comprehensively and accurately, and analyses them shrewdly. The result is, unfortunately, not always easy to read. Mr Harvey's prose is chromium-plated in the best Turnstile Street manner, and his sentences are tightly packed with relevant information. But his arguments are well worth the effort that is needed to keep pace with them. Here and there are statements with which one can quarrel. For instance, "rainfall is in all counties adequate for most crops" (p. 77): in about half of England and Wales there are crop droughts in at least five years out of ten. The emphasis upon a high yield from the national dairy herd (p. 133) is somewhat outdated: the need today is for more cheaply got yields, not necessarily large ones. The electric fence is an unreliable means of controlling sheep (p. 139): it can, in fact, be fully effective.

There are also a few, but important, omissions. For example, Mr Harvey dismisses kale in one non-committal sentence: its acreage, with some other minor green forage

crops, in England and Wales for stock-feed rose from 84,500 in 1938 to 297,000 in 1954, which indicates its current significance. But these are minor blemishes upon an otherwise brilliant exposition of modern farming.

It remains to ask what purpose *The Farming Kingdom* will serve. It is intended, as Sir James Scott Watson implies in his introduction, to inform the 94 per cent of British people who follow other walks of life, of the work and the problems of the 6 per cent who provide half their daily food. It has come, I think, a decade too late for that. Nearly all that 94 per cent now acquire their agricultural education Archer-wise, or not at all. And this book is a far thornier path to rural knowledge than that daily quarter-of-an-hour before seven o'clock. There remain the agricultural historians who, as Mr Maurice Beresford has said in another place, have not yet talked to a plowman—they will find the second part of *The Farming Kingdom* a convenient and reliable guide to the farming tools and techniques of 1955, but the first part will tell them nothing they do not know already, and a good deal they no longer accept. And there also remain the serious-minded inquirers from outside upon agricultural affairs—but they, heaven knows, will today hardly give Mr Harvey a worthwhile sale.

R. TROW-SMITH

H. P. R. FINBERG, *Roman and Saxon Withington: a Study in Continuity*. University College, Leicester (Dept of English Local History, Occasional Papers, No. 8), 1955. 40 pp., 2 maps, paper covers. 6s.

In their discussions of Old English society and landlordship, historians have not often descended from the general to the particular, from the laws, literature, and charters to actual villages and fields. To have done this, to have applied here the discipline and technique of local history, makes Mr Finberg's paper something of a landmark in Anglo-Saxon historiography. Merely to look at the two excellent maps is to realize how far one is from the almost abstract approach of, say, Vinogradoff's *Growth of the Manor*; how far,

too, from the more regional treatment of later writers. It is not the way of local history to yield general conclusions either easily or quickly; many villages and small groups of villages must be examined before we can distinguish the norm from the exception. But Mr Finberg's study firmly points the way. And it is not only for what it says, but for its invitation to a new and ultimately more conclusive method, that it appears as one of the most stimulating and original contributions to early English history for a long time.

The value of a local approach is evident throughout. In searching for the origins of this Gloucestershire village, Mr Finberg unearths much of later interest: for instance, the creation of new settlements (e.g. Pegglesworth, probably datable to 759-950; p. 17), and the steady expansion of the arable by piecemeal assarting in response to a growing population (pp. 19-20); the tenacity of local custom and organization, shown in the persistence of the separate identity of Withington east and west of the River Coln for centuries after their union under one landlord (§3, 4); the early nineteenth-century origin of the road north from Withington (p. 11) whose straightness has most recently deceived even Mr Margary in his book on *Roman Roads in Britain* (1, p. 134).

But all this is almost by the way. The crux of the paper is, having demonstrated the probable nature of early Saxon Withington, to pose the question of its relation to the Roman settlement there in detail. At its fullest extent, the bishop of Worcester's Withington estate included several villages once separate. But in the seventh century, before it came under episcopal lordship, Withington seems to have covered approximately the area of the modern parish, less certain lands beyond the River Coln to the east and the Hilcot Brook to the west. The only two settlements then existing in this area seem to have been the village itself with its two great fields just to the north, and the hamlet of Foxcote. Beyond the seventh century, when Withington appears as a prosperous estate, the Saxon evidence will not

take us. However, approaching it from the other, the Roman end, Mr Finberg suggests that this Saxon lordship was no new creation, but a direct continuation of a Roman and Romano-British estate of essentially similar layout and organization. The villa, about a quarter of a mile from the village, was the centre of an estate whose boundaries, to judge from the position of nearby villas, were very like the Saxon ones; like other villas, it had its dependent *coloni*, perhaps in the ancient site of Foxcote, but also in the village of Withington itself; and its economy, like that of the neighbourhood, was predominantly pastoral, with its arable in the best available place, just where the Saxon fields are later found. Such elements of physical continuity provide Mr Finberg with a starting-point for some most incisive and telling blows against the apostles of a free Anglo-Saxon society, and in favour of a fully developed manorialism at an early date over much of England. I am in no doubt that on the predominant servility of Old English society he is right, as I hope to show elsewhere; and if so, his other arguments in favour of continuity between Roman and Saxon Withington receive considerable support.

But it remains true, as Mr Finberg admits, that in this fundamental and ill recorded matter of continuity there can hardly be absolute proof, and the more sceptical will not have undue trouble in raising difficulties. Whereas it may be true that Roman and Saxon Withington betray great similarities, had the same fields and even many workers of the same race, does it follow that they represent significant continuity of settlement and social organization? Between the latest proved occupation of the Withington villa (admittedly never scientifically excavated) or its better excavated neighbours, and the Saxon conquest (577) or the final establishment of Mercian overlordship (628), there is a long, politically confused interval during which it is not easy to believe the Roman estate held together. If squatters took over the villa, as is

almost certain, how much of the villa-estate economy, with its oppressive and unpopular servility, can have long survived? In the end, must not estates follow country houses, then as now? So that the Saxons, finding only the bare remains of the villa-estate—men, fields, and so on—would fashion another estate which, however like its predecessor, was institutionally new; and rightly, they would call it by a new name. Again, although late Roman and perhaps early Saxon occupation of Foxcote is suggested by archaeology, there is no evidence for any settlement at Withington itself earlier than that under the Widia immortalized in the name; to postulate, and then to argue from a Roman colonate settlement there, however plausible by continental analogy, is injudicious when the place of the *coloni* in Britain is so dimly known. Or, thirdly, though it is possible that Christianity had a continuous history in Withington, the dedication of the village church to St Michael the Archangel is hardly a sign of native influence; for, according to the latest authority, "It is probable that the Roman missionaries in England introduced Michael into England as the patron of cemeteries."¹

How valid such scepticism is, it is impossible to say in the present state of knowledge. But the fact that it arises more readily over Mr Finberg's thesis of the continuity of Roman and Saxon Withington, than over his criticism of the accepted ideas on Anglo-Saxon society, at least emphasizes a point which, however obvious now, needs to be kept firmly in view. Mr Finberg is discussing two questions, not one. Early Anglo-Saxon England could easily have been manorial without the Roman villas having contributed anything very significantly or directly towards this. It is to be hoped that in the revaluations and discussions to which this admirable and searching paper must surely give rise, the separateness of these two points will not be forgotten, as they were in the arguments following Seebohm's *English Village Community*.

T. H. ASTON

¹ *Studies in Early British History*, ed. N. K. Chadwick, C.U.P., 1954, p. 183.

ARTHUR RAISTRICK, *The Role of the Yorkshire Cistercian Monasteries in the History of the Wool Trade in England*. International Wool Secretariat, 18-20 Regent Street, S.W.1. 1953. 24 pp. (No price stated.)

By the thirteenth century Kilnsey, a grange of Fountains Abbey, was fully organized as the administrative centre of an area of ninety square miles devoted to sheep-farming. Dr Raistrick has made a careful study of the running of the estate, based mainly on the accounts of Thomas Synton for 1446-58. As a geologist, however, he has not been content to leave the matter there. He reminds us that the picture can never be complete without tramping the countryside, considering rocks and soils, and tracing out the boundary crosses. This brings a vivid and refreshing quality to his work. He shows us something of the difficulties, and the possibilities, which faced the monks in these upland pastures, and reminds us that success was due not to organization alone but to "the shepherds and farmers who were native to the district, and who really understood it and felt the country in their bones." With only 6,000 words of text, supplemented by excellent maps and photographs, Dr Raistrick has given us a model of the way in which a short sketch of the history and organization of an estate may be presented to the best advantage.

E. A. L. MOIR

ALLAN FRASER, *Sheep Husbandry and Wool Growing in Britain*. International Wool Secretariat. 14 pp. (No price stated.)

In turning his attention to the sheep industry Dr Fraser is performing a most useful task. It is a pity however that since he is obviously competent to deal with the more technical sides of the subject, he should devote so much space in this short paper to a historical introduction that will leave the historian not only dissatisfied but disquieted. Is Cobbett to be taken as an authority on the effects of enclosure? Are we really to believe that the landowners after the Reformation "were apt to carry sheep-farming further than the monks, with the Fear of God upon them, had

ever dared to do"? The lack of diagrams and photographs is perhaps less serious than the absence of a single reference. Who was the "Elizabethan writer" who is quoted on p. 3? How is one to trace the fascinating Dr Parry who apparently knew as much about sheep as about the fashionable ailments of eighteenth-century Bath? Dr Fraser is more at home in discussing the contemporary situation, and his readers will join with him in deploring the official silence on the future of our good friend the sheep, giver "of red meat and white wool."

E. A. L. MOIR

SIR CYRIL FOX and LORD RAGLAN, *Monmouthshire Houses*. National Museum of Wales, Cardiff, 1951-4. Parts I and II, 17s. 6d. each; Part III, 21s.

The present time has sometimes been called "the era of the Little Man;" architecturally it might be termed the era of the discovery of the Little House. In the past the title 'Country Houses' has almost invariably referred to the dwellings of the nobility and gentry, ranging from such palaces as Haddon Hall and Blenheim down to the larger manor houses. This generation has discovered the interest and importance of the houses of the farmers and yeomen. But no study of that subject has hitherto appeared comparable in intensity to these three volumes, published by and for the National Museum of Wales.

The district selected for study is not the whole of the county of Monmouth, but the lowlands, below the 600-foot contour, and omitting the few towns. This area, one of intensive agricultural industry, is shown by the authors to possess a regional style of its own, influenced but not dictated by its neighbours, Herefordshire on the north and, later, Bristol and England generally. Part I, 'Medieval', treats of buildings dated from the fifteenth century to, roughly, 1560. None of these can safely be put earlier than 1450 and most of them are of timber, based on cruck construction, but often combining this with the sturdy walling usually associated with trussed-timber framing. Almost all

were originally of one storey, open to the roof, divided by a stud-and-panel partition into a hall and inner room—'parlour' or chamber. It is noteworthy that until well into the seventeenth century the kitchen seems almost always to have been a separate building detached from the house.

Part II covers the period from *c.* 1550 to *c.* 1610 and is therefore historically Tudor, though stylistically the title adopted, 'Sub-medieval', is justified. The main change, presumably due to the sudden great rise in wheat prices and agricultural prosperity, is the complete replacement of timber construction by stone (a phenomenon found in contemporary Yorkshire). Of the houses dealt with in this part a few link up with the 'long-house' of parts of Wales, where men and cattle are housed under the same roof; but here, instead of one common entrance passage for both, the byre, or cow-house, is separated from the dwelling by a solid wall and has its own door; and sometimes this end room was clearly used not for cattle but for storing wool or other dead stock.

In Part III, 'Renaissance', *c.* 1590–1714, the advance in comfort and aesthetic enrichment is notable. With the cheapening of glass, glazed windows replace the mullioned openings from which the wind was excluded only by shutters. It is possible, however, that some of the early examples with wider inter-

spaces (Part III, p. 17, n. 1) may have had unrebated casements, practically glazed shutters; for in the sixteenth century 'glass windows' were tenants' fixtures and removable. The porch, another protection from draughts, also makes its appearance. And an interesting local feature is due to the prevalence of cider-making and the need for cellars at this time. This final period naturally provides the largest number of examples surviving, as there would always be a tendency to discard the less comfortable types of dwelling. This helps to explain the absence of ancient labourers' dwellings, which must have been hovels of flimsy construction, to be abandoned as soon as a rise in the standard of living permitted.

In addition to 480 houses, quite a number of barns and other farm buildings are dealt with in this great survey, in which the numerous ground plans and drawings of details, in addition to photographs, constitute its outstanding value as a model for others to follow. The one lack is documentary evidence; possibly the probate inventories, of which Mr F. W. Steer has made such good use in Essex, are lacking for Monmouthshire; but teams for similar local surveys—and team-work is essential—should include at least one member to undertake documentary research.

L. F. SALZMAN

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